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Remarks

Claims 1-6 are pending herein. By this Amendment, claims 1 and 3 have been amended, and new claims 5 and 6 have been added.

Claims 1 and 3 have been amended to state that the catalyst consists of the recited proton type β zeolite. Furthermore, claim 3 has been amended to clarify that the method comprises contacting the exhaust gas with the catalyst in the presence of methanol and/or dimethyl ether as reducing agent. Claim 3 has also been amended to replace the language “reducing/removing” with --removing--.

New claim 5 combines the limitations of original claims 3 and 4.

New claim 6 corresponds to original claim 3 except that the reducing agent is limited to dimethyl ether.

In the Final Office Action, claims 3 and 4 are rejected under 35 U.S.C. §112, second paragraph; claims 1-4 are rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 5,374,410 to Grasselli et al. (“Grasselli”); claims 1 and 2 are rejected under 35 U.S.C. §102(b) as being anticipated by JP 2000-308831 (“JP ‘831”); claims 1 and 2 are rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 5,776,423 to Feeley et al. (“Feeley”); and claims 3 and 4 are rejected under 35 U.S.C. §103(a) as being unpatentable over JP ‘831 in view of Grasselli.

The Advisory Action maintained the rejections set forth in the Office Action.

In view of the amendments and remarks herein, Applicants respectfully request reconsideration and withdrawal of the rejections set forth in the Final Office Action.

I. Rejection of Claims 3 and 4 Under 35 U.S.C. §112

Claims 3 and 4 are rejected under §112, second paragraph, as being indefinite. According to the Office Action, the language “reducing/removing” in claim 3, line 2, renders the claims indefinite.

As noted above, claim 3 has been amended to replace the language “reducing/removing” with the term --reducing--. Applicants respectfully submit that amended claim 3 and claim 4 are not indefinite.

II. Rejection of Claims 1-4 Under 35 U.S.C. §102(b) Based on Grasselli

Claims 1-4 are rejected under §102(b) as being anticipated by Grasselli. Grasselli is cited for disclosing a catalyst composition and method for the removal of nitrogen oxides in waste gas streams. The method comprises converting nitrogen oxides present in oxygen-containing gaseous effluents to nitrogen and N₂O by reacting the gaseous effluents with a

reducing agent in the presence of a zeolitic catalyst (col. 2, lines 25-35). Suitable reducing agents include methanol (col. 2, lines 55-68). According to the Office Action, Grasselli teaches at col. 4, lines 45-65 and col. 6, lines 35-40, that suitable catalysts include zeolite beta having a silica to alumina molar ratio of at least 30 and that such a zeolite may be in hydrogen form.

Applicants respectfully submit that Grasselli does not anticipate claims 1-6.

(A) Claims 1-4

The catalyst disclosed in Grasselli comprises a film of interconnected zeolite crystals bonded to a substrate surface (see, e.g., col. 2, lines 31-32). Amended claim 1 is directed to a catalyst consisting of a proton type β zeolite. Amended claim 3 is directed to a method of purifying exhaust gas, wherein the method uses a catalyst consisting of a proton type β zeolite. Claims 2 and 4 depend upon claims 1 and 3, respectively. Thus, the catalyst recited in instant claims 1-4 excludes the substrate present in the Grasselli catalyst.

Therefore, for at least the foregoing reason, Applicants submit that Grasselli does not anticipate instant claims 1-4.

(B) Claim 5

New claim 5 is directed to a method of purifying exhaust gas, wherein the method removes nitrogen oxides in the exhaust gas containing excessive oxygen therein, the method comprising contacting the exhaust gas with a catalyst in the presence of methanol and/or dimethyl ether as reducing agent, wherein the catalyst comprises a proton type β zeolite catalyst having a $\text{SiO}_2/\text{Al}_2\text{O}_3$ molar ratio within 20-70. Thus, claim 5 involves the following combination:

- (1) a proton type β zeolite catalyst having a $\text{SiO}_2/\text{Al}_2\text{O}_3$ molar ratio within 20-70, and
- (2) a reducing agent that is methanol and/or dimethyl ether.

Grasselli does not specifically teach the foregoing combination.

Grasselli discloses a broad range of zeolite catalysts. The patent teaches a method for making the zeolite and states that “[t]ypical zeolites to be synthesized according to this method are characterized by a Constraint Index of about 1 to about 12” (col. 4, lines 34-36). The patent then lists zeolites “which conform to the specified values of Constraint Index for medium pore zeolites” (col. 4, lines 43-45). These include, “for example, ZSM-5, ZSM-11, ZSM-12, ZSM-22, ZSM-23, ZSM-35, ZSM-38, ZSM-5/ZSM-11 intermediate, and ZSM-48” (col. 4, lines 45-47). Grasselli further teaches that “also included herein is Zeolite Beta which

has a Constraint Index in the range of approximately 0.6-2.0, and which is described in U.S. Pat. No. 3,308,069 and Re. No. 28,341" (col. 4, lines 65-68). At col. 6, lines 37-40, Grasselli teaches that "[z]eolites can be used either in the alkali metal form, e.g., the sodium or potassium form; the ammonium form; the hydrogen form or another univalent or multivalent cation form".

Grasselli also teaches a wide range of $\text{SiO}_2:\text{Al}_2\text{O}_3$ molar ratios for the zeolites therein. For example, Grasselli teaches the following:

These zeolites may be produced with differing silica:alumina ratios ranging from 12:1 *upwards*. They may, in fact, be produced from reaction mixtures from which aluminum is intentionally excluded, so as to produce materials having extremely high silica:alumina ratios which, in theory at least may extend *up to infinity*. Silica:alumina ratios of at least 30:1 and higher will be common for these zeolites, e.g., 70:1, 200:1, 500:1, 1600:1 or even higher (col. 4, lines 52-61). [emphasis added]

As to the reducing agents which can be used therein, Grasselli teaches the following:

Suitable reducing agents are hydrogen, CO, nitrogen-containing entities such as ammonia, hydrogen cyanide, urea and cyanuric acid, oxygenates including methanol, ethanol, propanol, formaldehyde, acetaldehyde, acetone and methyl ethyl ketone and hydrocarbons including $\text{C}_2\text{-C}_4$ paraffins and olefins (col. 2, line 68 – col. 3, line 2).

To arrive at the method set forth in instant claim 5, one skilled in the art reviewing Grasselli would have to select a specific zeolite (i.e., a proton type β zeolite) from among all those listed at col. 4, lines 34-36, 43-47 and 65-68, and at col. 6, lines 37-40; with a specific $\text{SiO}_2:\text{Al}_2\text{O}_3$ molar ratio (i.e., 20-70) from silica:alumina ratios that can range from 12:1 upwards to infinity, and can be at least 30:1 and higher, or 70:1, 200:1, 500:1, 1600:1 or even higher; and a specific reducing agent, (i.e., methanol and/or dimethyl ether (the dimethyl ether not being specifically named in Grasselli)) from among those listed at col. 2, line 68 – col. 3, line 2.

In order to anticipate, the reference must clearly and unequivocally disclose the claimed invention or direct those skilled in the art to the invention without any need for picking, choosing, and combining various disclosures not directly related to each other by the teaching of the cited reference. *In re Arkley*, 172 USPQ2d 524, 526 (CCPA 1972) (copy enclosed).

Applicants submit that Grasselli does not anticipate the claim 5 method because the reference does not specifically disclose the combination of zeolite, SiO₂:Al₂O₃ molar ratio and reducing agent used in claim 5, and to arrive at the claim 5 method, one skilled in the art would be required to pick and choose among a number of different zeolites, SiO₂:Al₂O₃ molar ratios and reducing agents disclosed by Grasselli.

Applicants submit that claim 5 also would not have been obvious over Grasselli.

Table 1, presented on page 11 of the instant specification, shows that different zeolite catalysts, even when used with the same reducing agent, can have different NOx removal efficiencies. For example, Sample 1 (invention example) used "Catalyst 1", a proton type β zeolite prepared by burning NH₄ type β zeolite (having a SiO₂/Al₂O₃ molar ratio of 27:1) on the market at 450°C for 5 hours. Sample 4 (comparative example) used "Catalyst C1", a proton type β zeolite prepared by burning a commercially available NH₄ type β zeolite (having a SiO₂/Al₂O₃ molar ratio of 75:1) at 450°C for 5 hours. Both Samples 1 and 4 used methanol as the reducing agent. As shown in Table 1, in the presence of methanol, Catalyst 1 achieved NOx removal efficiencies of 64% at 300°C., 88% at 350°C., and 95% at 400°C., whereas Catalyst C1 achieved NOx removal efficiencies of 18% at 300°C., 27% at 350°C., and 35% at 400°C. Thus, even though Catalyst 1 and Catalyst C1 were both proton type β zeolites, their NOx removal efficiencies in the presence of methanol were substantially different.

Samples 10 and 11 in Table 1 both used Catalyst 1 but differing amounts of propylene oxide (a reducing agent outside the scope of instant claim 5 but possibly within the broad scope of reducing agents disclosed in Grasselli). The NOx removal efficiencies of Catalyst 1 in Samples 10 and 11 were substantially lower than the Catalyst 1's NOx removal efficiency in the presence of methanol, a reducing agent within the scope of claim 5.

Samples 4-7, which used different catalysts, all of which are outside the scope of instant claim 5, but the same reducing agent, i.e., methanol, a reducing agent within the scope of claim 5, all had substantially lower NOx removal efficiencies than Samples 1 and 2, which used catalysts within the scope of claim 5 and methanol as the reducing agent. Thus, although methanol was used as the reducing agent in each instance, only its use with a catalyst within the scope of claim 5 resulted in good NOx removal efficiencies.

Likewise, Samples 8 and 9, which used different catalysts, both of which are outside the scope of instant claim 5, but the same reducing agent, i.e., dimethyl ether, the other reducing agent within the scope of claim 5, both had substantially lower NOx removal efficiencies than did Sample 3, which used a catalyst within the scope of claim 5 and

dimethyl ether as the reducing agent. Thus, although dimethyl ether was used as the reducing agent in each instance, only its use with a catalyst within the scope of claim 5 resulted in good NOx removal efficiencies.

Thus, Table 1 shows that catalyst/reducing agent combinations using a catalyst and a reducing agent within the scope of claim 5 resulted in substantially better NOx removal efficiencies than catalyst/reducing agent combinations where either the catalyst or the reducing agent was outside the scope of claim 5.

Applicants submit that the particular results presented in Table 1 would not be expected or obvious in view of Grasselli.

Thus, Applicants submit that instant claim 5 would not have been obvious over Grasselli.

(C) Claim 6

New claim 6 is directed to a method of purifying exhaust gas, wherein the method removes nitrogen oxides in the exhaust gas containing excessive oxygen therein. The method comprises contacting the exhaust gas with a catalyst in the presence of dimethyl ether as reducing agent, wherein the catalyst comprises a proton type β zeolite catalyst.

Grasselli discloses that suitable reducing agents include oxygenates such as "methanol, ethanol, propanol, formaldehyde, acetaldehyde, acetone and methyl ethyl ketone" (col. 2, lines 66-68). Grasselli does not specifically mention dimethyl ether.

Applicants submit that Grasselli's disclosure regarding the use of oxygenates as reducing agents does not anticipate instant claim 6.

In *In re Meyer* ("Meyer")¹, the Court of Customs and Patent Appeals ("CCPA") found that:

[t]he genus, 'alkaline chlorine or bromine solution', does not identically disclose or describe, within the meaning of §102, the species alkali metal hypochlorite, since the genus would include an untold number of species.²

In *In re Jacobson* ("Jacobson")³, the CCPA reversed the holding by the Patent Board of Appeals that two claims directed to a process for forming free-flowing granules from vinyl

¹ 202 USPQ 175 (CCPA 1979).

² *Id.* At 179.

³ 160 USPQ 795 (CCPA 1969).

emulsion polymerizate were anticipated under §102 by a reference (Samler) which disclosed the use of polyvinyl thermoplastics to form such granules. The CCPA stated that:

we do not think that the general disclosure of Samler can be considered anticipatory of a specific limitation not disclosed merely because the general will *include* the specific [emphasis in original text].⁴

In *Akzo N.V. v. International Trade Commission* ("Akzo")⁵, the U.S. Court of Appeals for the Federal Circuit agreed with a holding by the U.S. International Trade Commission that claims to a process for making aramid fibers using a 98% solution of sulfuric acid were not anticipated by a reference which disclosed using sulfuric acid solution but which did not disclose using a 98% concentrated sulfuric acid solution.

Copies of *Meyer*, *Jacobson* and *Akzo* are enclosed.

In view of *Meyer*, *Jacobson* and *Akzo*, Applicants submit that Grasselli's disclosure regarding the use of oxygenates as reducing agents does not anticipate the use of dimethyl ether as a reducing agent. Thus, Applicants respectfully submit that Grasselli does not anticipate claim 6.

III. Rejection of Claims 1 and 2 Under 35 U.S.C. §102(b) Based on JP '831

Claims 1 and 2 are rejected under §102(b) as being anticipated by JP '831. According to the Office Action, JP '831 discloses a catalyst composition for the selective catalytic reduction of nitrogen oxides, comprising a hydrogen form zeolite beta having a silica to alumina molar ratio of 20-200 (paragraph [0032]).

JP '831 corresponds to U.S. Patent No. 6,528,031 to Park et al. ("Park"), a copy of which is enclosed with the Information Disclosure Statement being filed with the instant Amendment.

Park teaches that the "zeolite is preferably one of H-type zeolite such as BEA, MFI and USY having Si/Al ratio of 10-100" (col. 4, lines 14-15). However, Park also discloses that the catalyst therein comprises not only the zeolite but also a catalytically active noble metal component supported on the zeolite and an organic compound having a molecular weight of 100-250 being disposed within the zeolite (i.e., the zeolite is filled with the organic compound) (see, e.g., Abstract; col. 3, lines 24-27; and claims 1 and 13).

⁴ Id. At 800.

⁵ 1 USPQ2d 1241 (Fed. Cir. 1986). See also MPEP §2131.02

By this Amendment, claim 1 has been amended to state that the catalyst consists of the recited proton type β zeolite. Thus, Applicants' claimed catalyst excludes the catalytically active noble metal component and the organic compound present in the catalyst taught in Park and JP '831.

Therefore, for at least the foregoing reason, Applicants respectfully submit that JP '831 does not anticipate instant claim 1.

IV. Rejection of Claims 1 and 2 Under 35 U.S.C. §102(b) Based on Feeley

Claims 1 and 2 are rejected under §102(b) as being anticipated by Feeley. According to the Office Action, Feeley discloses a catalyst composition useful in the reduction of nitrogen oxides, comprising a zeolite beta in hydrogen or proton form having a silica to alumina molar ratio of about 25-60 (col. 3, lines 33-43).

The catalyst disclosed in Feeley contains a zeolite material having incorporated therein copper, cobalt and iron as catalytically active species (see, e.g., Abstract; and col. 2, lines 31- 33).

As noted above, claim 1 has been amended herein to state that the catalyst consists of the recited proton type β zeolite. Thus, Applicants' claimed catalyst excludes the copper, cobalt and iron present in the Feeley zeolite.

Therefore, for at least the foregoing reason, Applicants respectfully submit that Feeley does not anticipate instant claim 1.

V. Rejection of Claims 3 and 4 Under 35 U.S.C. §103(a) Based on JP '831 in view of Grasselli

JP '831 is cited for disclosing a catalyst composition for the selective catalytic reduction of nitrogen oxides comprising a hydrogen form zeolite beta having a silica to alumina molar ratio of 20-200 (paragraph [0032]). JP '831 is further cited for teaching a process for reducing nitrogen oxides, comprising contacting the nitrogen oxides in the presence of the catalyst to selectively reduce nitrogen oxides using methane as a reducing agent in the presence of excess oxygen (paragraph [0018]). According to the Office Action, the difference between JP '831 and the instant claims is that JP '831 does not disclose that the reducing agent is methanol and/dimethyl ether.

Grasselli is cited for disclosing a process for the reduction of nitrogen oxides using a reducing agent, wherein suitable reducing agents include methanol and C2-C4 paraffins (col. 2, line 58 – col. 3, line 2).

According to the Office Action, it would have been obvious to have modified the method taught in JP '831 to include the use of methanol as a reducing agent in view of

Grasselli. The motivation for such modification is said to be Grasselli's teaching that methanol and methane are functionally equivalent in the reduction of nitrogen oxides using a reducing agent.

Applicants respectfully submit that claims 3-6 would not have been obvious over JP '831 in view of Grasselli.

(A) Claims 3 and 4

Amended claim 3 is directed to a method of purifying exhaust gas, wherein the method uses a catalyst consisting of a proton type β zeolite. Claim 4 depends upon claim 3. Thus, the catalyst used in the method of claims 3 and 4 excludes the catalytically active noble metal component and the organic compound present in the catalyst taught in Park and JP '831 and further excludes the substrate present in the Grasselli catalyst.

Therefore, for at least this reason, Applicants respectfully submit that claims 3 and 4 would not have been obvious over JP '831 in view of Grasselli.

(B) Claim 5

Claim 5 is directed to a method of purifying exhaust gas, wherein the method removes nitrogen oxides in the exhaust gas containing excessive oxygen therein, comprising contacting the exhaust gas with a catalyst in the presence of methanol and/or dimethyl ether as reducing agent, wherein the catalyst comprises a proton type β zeolite catalyst having a $\text{SiO}_2/\text{Al}_2\text{O}_3$ molar ratio within 20-70.

Park (which corresponds to JP '831) discloses that the reducing agent therein is a hydrocarbon, preferably natural gas containing 85% or more of methane (see, e.g., col. 3, lines 47-52). Park does not specifically disclose either methanol or dimethyl ether. Grasselli discloses that suitable reducing agents include oxygenates such as "methanol, ethanol, propanol, formaldehyde, acetaldehyde, acetone and methyl ethyl ketone and hydrocarbons including C₂-C₄ paraffins and olefins" (col. 2, line 66 – col. 3, line 2). Grasselli does not specifically mention dimethyl ether. Grasselli also does not specifically mention methane.

According to the Office Action, it would have been obvious, in view of Grasselli, to have modified the JP '831 method to use methanol as the reducing agent because of Grasselli's teaching that methanol and methane are functionally equivalent in the reduction of nitrogen oxides using a reducing agent.

In the Information Disclosure Statement filed herewith, Applicants submit an article "Shokubai (Catalyst)", Vol. 33 (1991), No. 5, pages 320-327, published by The Catalysis Society of Japan (referred to herein as the "Shokubai article"). In the Shokubai article, Figure 6 (page 323) is a graph showing the selective reduction of NO to N₂ (%) by various

reducing agents over alumina as a function of temperature (°C). The reducing agents tested included methane and methanol, the methane being represented by a triangle (with an upward point) and the methanol being represented by a six-sided symbol. The graph shows that methane and methanol perform substantially differently from one another. For example, reduction with methanol appears to begin at about 200°C, whereas reduction with methane only appears to begin at 400°C. Methanol appears to have achieved 50% reduction at 300°C, a temperature below the point where methane even begins to effect reduction. Thus, although methane and methanol may both be able to reduce nitrogen oxides, the Shokubai article shows that they are not functionally equivalent in doing so, at least in the presence of alumina.

Methanol is an oxygen-containing compound and can be easily oxidized catalytically, whereas methane is a very stable hydrocarbon. At least one reason why methanol and diethyl ether are useful in Applicants' claimed invention is that both compounds contain oxygen and are produced from a dehydration reaction using two molecules of methanol.

As discussed above, the catalyst used in JP '831 (Park) comprises a zeolite, a catalytically active noble metal component supported on the zeolite and an organic compound having a molecular weight of 100-250 being disposed within the zeolite (i.e., the zeolite is filled with the organic compound) (see, e.g., Abstract; col. 3, lines 24-27; and claims 1 and 13). Park teaches that the "zeolite is preferably one of H-type zeolite such as BEA, MFI and USY having Si/Al ratio of 10-100" (col. 4, lines 14-15). The catalyst structure in Grasselli comprises "a film of interconnected zeolite crystals bonded to a substrate surface" (col. 2, lines 32-33). As discussed previously herein, Grasselli discloses a broad variety of zeolites. The zeolite used in JP '831 (Park) is not specifically disclosed in Grasselli. Applicants submit that one skilled in the art, particularly upon review of the Shokubai article, would not necessarily be motivated by Grasselli to use methanol in place of methane in the method taught in JP '831 (Park).

Furthermore, as discussed above, the experimental results set forth in Table 1 on page 11 of the instant specification show that the effectiveness of a particular reducing agent will vary according to the particular catalyst used. For example, Sample 1 (invention example) used "Catalyst 1", a proton type β zeolite prepared by burning NH₄ type β zeolite (having a SiO₂/Al₂O₃ molar ratio of 27:1) on the market at 450°C for 5 hours. Sample 4 (comparative example) used "Catalyst C1", a proton type β zeolite prepared by burning a commercially available NH₄ type β zeolite (having a SiO₂/Al₂O₃ molar ratio of 75:1) at 450°C for 5 hours. Both Samples 1 and 4 used methanol as the reducing agent. As shown in Table, in the

presence of methanol, Catalyst 1 achieved NOx removal efficiencies of 64% at 300°C., 88% at 350°C., and 95% at 400°C., whereas Catalyst C1 achieved NOx removal efficiencies of 18% at 300°C., 27% at 350°C., and 35% at 400°C. Thus, even though Catalyst 1 and Catalyst C1 were both proton type β zeolites, their NOx removal efficiencies in the presence of methanol were substantially different.

Thus, Applicants submit that one skilled in the art would not have been motivated to replace the methane reducing agent in JP '831 with methanol in view of Grasselli, which does not specifically disclose the catalyst used in JP '831.

Therefore, for at least the foregoing reasons, Applicants respectfully submit that claim 5 would not have been obvious over JP '831 in view of Grasselli.

(C) Claim 6

Claim 6 is directed to a method of purifying exhaust gas, wherein the method removes nitrogen oxides in the exhaust gas containing excessive oxygen therein, comprising contacting the exhaust gas with a catalyst in the presence of dimethyl ether as reducing agent, wherein the catalyst comprises a proton type β zeolite catalyst.

As noted above, Park (which corresponds to JP '831) discloses that the reducing agent therein is a hydrocarbon, preferably natural gas containing 85% or more of methane (see, e.g., col. 3, lines 47-52). Park does not mention dimethyl ether.

Grasselli discloses that suitable reducing agents include oxygenates such as "methanol, ethanol, propanol, formaldehyde, acetaldehyde, acetone and methyl ethyl ketone" (col. 2, lines 66-68). Grasselli does not specifically mention dimethyl ether.

Applicants submit that because neither JP '831 nor Grasselli discloses dimethyl ether as a reducing agent, claim 6 would not have been obvious over JP '831 in view of Grasselli.

VI. Conclusion

In view of the amendments and remarks herein, Applicants respectfully request that the rejections set forth in the Office Action be withdrawn and that claims 1-6 be allowed.

If any additional fees, e.g., under 37 C.F.R. §§1.16 or 1.17, are due in connection with this filing, please charge the fees to Deposit Account No. 02-4300; Order No. 034145.002. Any overpayment can be credited to Deposit Account No. 02-4300.

Respectfully submitted,
SMITH, GAMBRELL & RUSSELL, LLP


Glenn J. Perry, Reg. No. 28458
1850 M Street, NW – Suite 800
Washington, DC 20036
Telephone: (202) 263-4300
Facsimile: (202) 263-4329

Date: August 18, 2006

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Enclosures: (1) Request for Continued Examination Transmittal
(2) Information Disclosure Statement
(3) Check for the sum of \$1,170
(4) Fee Transmittal Form
(5) *In re Arkley*, 172 USPQ2d 524, 526 (CCPA 1972)
(6) *In re Meyer*, 202 USPQ 175 (CCPA 1979)
(7) *In re Jacobson*, 160 USPQ 795 (CCPA 1969)
(8) *Akzo N.V. v. International Trade Comm'n*, 1 USPQ2d 1241 (Fed. Cir. 1986)

[2] Defendant, by its answer, asserts that the patents in question are invalid for 14 different reasons. Misjoinder or nonjoinder of inventors is simply one of the reasons defendant has alleged. This Court can see no advantage in granting a separate hearing on the issue of nonjoinder or misjoinder; indeed, if such a hearing were granted, the parties might have to produce the same witnesses and evidence two different times. This Court is of the opinion that the issue of nonjoinder or misjoinder of inventors is no more of a threshold legal issue than any of the other grounds asserted for patent invalidity. Accordingly, this Court holds defendant has no right to a separate hearing on the issue of patent invalidity due to misjoinder or nonjoinder of inventors under Rule 42(b) of the Federal Rules of Civil Procedure.

III. Rule 12(d)

Rule 12(b) (7) of the Federal Rules of Civil Procedure allows a party to move to dismiss a claim for failure to join a party under Rule 19. Rule 12(d) states:

The defenses specifically enumerated (1)-(7) in subdivision (b) of this rule, whether made in a pleading or by motion *** shall be, heard and determined before trial on application of any party, unless the court orders that the hearing and determination thereof be deferred until the trial.

[3] Defendant apparently asserts the alleged nonjoined or misjoined inventors are necessary parties to this suit under Rule 19. This contention is without merit. The inventors are not necessary parties for a just adjudication of this suit; they are only involved tangentially in the instant case in that their nonjoinder or misjoinder in the patent application may have rendered the patent invalid. Accordingly, this Court holds defendant has no right to a separate hearing on the issue of patent invalidity due to misjoinder or nonjoinder of inventors under Rule 12(d) of the Federal Rules of Civil Procedure.

Accordingly, it is hereby ordered, adjudged and decreed that defendant's motion for a separate hearing on the issue of patent invalidity due to nonjoinder or misjoinder of inventors is denied.

Court of Customs and Patent Appeals

In re ARKLEY, EARDLEY, AND LONG

No. 8553 Decided Feb. 17, 1972

PATENTS

1. Patentability — Anticipation — In general (§51.201)

Patentability — Invention — In general (§51.501)

Fact that rejections under 35 U.S.C. 103 are proper where subject matter claimed "is not identically disclosed or described" in prior art indicates that rejections under section 102 are proper only when claimed subject matter is identically disclosed or described in prior art.

2. Court of Customs and Patent Appeals — In general (§28.01)

Court does not grant patent where it reverses rejection of claim; it is Patent Office which grants patents, not the court.

3. Court of Customs and Patent Appeals — In general (§28.01)

1 Pleading and practice in Patent Office — Rejections (§54.7)

Court's reversal of rejection of claim on ground that it is anticipated by reference under 35 U.S.C. 102 leaves Patent Office free to reject claim as obvious under section 103 in view of reference since such latter rejection was not before court.

4. Court of Customs and Patent Appeals — Weight given decisions below (§28.35)

It is not court's practice to apply a different standard in cases in complex areas of technology than it does in easily understood cases.

Particular patents—Cephaloridine

Arkley, Eardley, and Long, Cephaloridine, rejection of claim 30 reversed.

Appeal from Board of Appeals of the Patent Office.

Application for patent of Vincent Arkley, Stephen Eardley, and Alan Gibson Long, Serial No. 329,212, filed Dec. 9, 1963; Patent Office Group 120. From decision rejecting claim 30, applicants appeal. Reversed; Baldwin, Judge, concurring with opinion in which

as and Patent Appeals

EARDLEY, AND LONG

Decided Feb. 17, 1972

— Anticipation — In
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subject matter claimed "is
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that rejections under section
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Practice in Patent Of-

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appeal. Reversed; Bald-
g with opinion in which

Almond, Judge, joins; Worley, Chief Judge,
dissenting with opinion.

J. WILLIAM PIKE and BACON & THOMAS, both
of Washington, D. C. (FRED T. WILLIAMS,
JOHN J. CAVANAUGH, and PENDLETON,
NEUMAN, WILLIAMS & ANDERSON of
counsel) for appellants.

S. WM. COCHRAN (JACK E. ARMORE and
HENRY WILLARD TARRING II of counsel)
for Commissioner of Patents.

Before WORLEY, Chief Judge, and RICH, AL-
MOND, BALDWIN, and LANE, Associate
Judges.

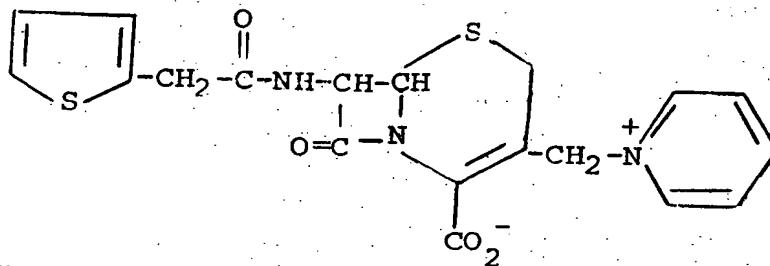
RICH, Judge.

This appeal is from the decision of the Patent
Office Board of Appeals affirming the re-
jection of claim 30 in appellants' application
serial No. 329,212, filed December 9, 1963,
for a cephalosporin-type antibiotic known as
cephaloridine. No claim has been allowed. We
reverse.

The Subject Matter Claimed.

The appealed claim is drawn to a single
compound, by structural formula, and reads:

30. A compound of the formula

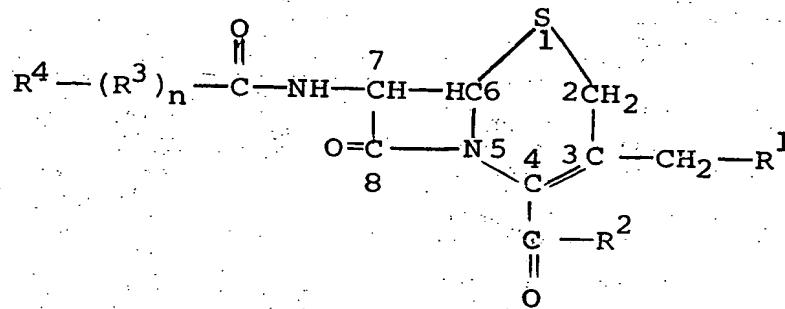


This compound is said to be a broad spectrum
antibiotic, effective against both gram-positive
and gram-negative micro-organisms, and to
possess many other virtues not relevant here
because of the nature of the rejection.

The Rejection

Appellants' claim has been rejected as
anticipated by U. S. patent No. 3,218,318,

issued to Edwin H. Flynn November 16,
1965, on an application filed in the United
States August 31, 1962, and available against
appellants' application by virtue of 35 U.S.C.
102(e) as of its filing date. This reference
discloses generically a class of cephalosporin-
type compounds having the following structural formula:



in which R¹, taken alone, is —OH, C₁-C₈
acyloxy, or tertiary-amino, R² is —OH when
R¹ is —OH, R² is —OH when R¹ is C₁-C₈
acyloxy, R² is —O⁻ when R¹ is tertiary-
amino, R¹ and R², when taken together, are
—O—, n is zero or 1, R³ is C₁-C₆ alkylene,
and R⁴ is a heteromonocyclic radical
containing O, S, and/or N. Appellants
"conservatively" estimate that over 230,000
compounds (including, concededly, theirs) are
embraced within this generic disclosure, and

the board in turn conceded that, "If this were
the only anticipatory disclosure in the ref-
erence," the disclosure would be "too dif-
fuse" to support a 102 rejection.

However, the board found: (1) that Flynn's
examples 4 and 10 "adequately disclose the
exact precursors of the presently claimed
compound"; (2) that Flynn's statement that

Cephalosporin C is also readily converted
into compounds of the cephalosporin C A

type by refluxing in aqueous solution with an excess of pyridine, for example, as described in Belgian Patent 593,777.

was adequate to teach how to convert the C-type precursors disclosed in examples 4 and 10 to the CA-type compound claimed by appellants; and (3) that Flynn's statement that, "in general, those compounds which possess the cephalosporin CA nucleus are more effective antibacterially than those containing the cephalosporin C nucleus" provided the "motive *** to follow this additional teaching ***." Putting these three findings together, the board held that

The indicated combination of Example 4 or 10 with *** [the teaching of how to convert "Cephalosporin C *** into compounds of the cephalosporin CA type"] is not a matter of obviousness within the meaning of 35 U.S.C. 103 but of direct teaching within the four corners of the patent.

The effect of this holding, of course, was that the board did not have to look at the extensive objective evidence which appellants had offered to rebut any inference of obviousness which might be thought to arise from the teachings of the Flynn patent.

Opinion

[1] The sole issue in this case is whether cephaloridine is "described" in the Flynn patent within the meaning of that word in 35 U.S.C. 102(e).¹ It is to be noted that rejections under 35 U.S.C. 103 are proper where the subject matter claimed "is not *identically* disclosed or described" (emphasis ours) in "the prior art," indicating that rejections under 35 U.S.C. 102 are proper only when the claimed subject matter is *identically* disclosed or described in "the prior art." Thus, for the instant rejection under 35 U.S.C. 102(e) to have been proper, the Flynn reference must clearly and unequivocally disclose the claimed compound or direct those skilled in the art to the compound without *any* need for picking, choosing, and combining various disclosures not directly related to each other by the teachings of the cited reference. Such picking and choosing may be entirely proper in the making of a 103, obviousness rejection, where the applicant must be afforded an opportunity to rebut with objective evidence any inference of obviousness which may arise from the *similarity* of the subject matter which he claims to

¹At one time appellants contended that Flynn was not an "enabling disclosure," In re LeGrice, 49 CCPA 1124, 301 F.2d 929, 133 USPQ 365 (1962), but we gather that they have abandoned that contention on appeal, although there is still an ambiguous reference to LeGrice in their briefs.

the prior art, but it has no place in the making of a 102, anticipation rejection.

In this case we have no difficulty in deciding that the portions of the Flynn reference relied upon by the Patent Office do not identically describe the claimed subject matter. As appellants point out, the compounds of Flynn's examples 4 and 10 are the "exact precursors" of appellants' compound "only to the extent that appellants have discovered that cephaloridine will be formed if the acid [disclosed in example 10] is first selected and then carefully reacted with a particular tertiary amine *which also must be selected*." (Emphasis in original.) Of course, it does appear that the "particular tertiary amine" to which appellants refer is pyridine, which is mentioned elsewhere in Flynn as an example of the class of reactants² with which a particular cephalosporin C-type compound (namely, cephalosporin C itself) may be converted into compounds of the cephalosporin CA type, but there is nothing in the teachings relied upon by the Patent Office which "clearly and unequivocally" directs those skilled in the art to make this selection nor any indication that Flynn ever made the selection himself. Similarly, while it is reasonable to suppose that Flynn's teaching that "in general, those compounds which possess the cephalosporin CA nucleus are more effective antibacterially than those

²The parties argue, in essence, about whether the words "for example" in the sentence "Cephalosporin C is also readily converted into compounds of the cephalosporin CA type by refluxing in aqueous solution with an excess of pyridine, for example, as described in Belgian Patent 593,777" refers to the word "pyridine" or the words "as described." Appellants argue that "it is to be stressed that pyridine is only being suggested as an *example* of the tertiary amine[s] suitable for the reaction with the prior art compound cephalosporin C," while the solicitor seems to be taking the position that Flynn's specification would be read as indicating that the Belgian patent was one place among many where those skilled in the art could learn how to react cephalosporin C with pyridine. While the matter is not free from doubt, we think it more likely that the sentence would be read in the former way because the presence of the word "type" after "CA" and not after "C" suggests that one particular C-type compound (namely, cephalosporin C itself) can be changed into *various* CA-type compounds by refluxing it with an excess of the proper reactant. This interpretation of the controverted sentence is reinforced by the next sentence in Flynn's specification, which is as follows:

The reaction is applicable in general to the tertiary amines, of which numerous examples are given above, yielding corresponding derivatives of the cephalosporin CA type wherein the tertiary amine is attached to the methyl group in the 3 position of the thiazine ring, and forms an inner salt with the carboxyl group in the 4 position.

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has no place in the making or rejection. There is no difficulty in deciding if the Flynn reference relied on by the Patent Office is not identically subject matter. As appellants' compounds of Flynn's example are the "ex art precursors" of and "only" to the extent that it is covered that cephaloridine C acid [disclosed in example 2 and *therz* carefully reacted tertiary amine which also (Emphasis is in original.)] Of course, the "particular" which appellants refer to is mentioned elsewhere in the list of reactants of the cephalosporin C-type, cephalosporin C itself, into compounds of the type, but there is nothing relied upon by the Patent Office and unequivocally directs the art to make this selection that Flynn ever made. Similarly, while it is possible that Flynn's teaching those compounds which ilosporin CA nucleus are antibacterially than those

in essence, about whether the "sample" in the sentence is also readily converted into cephalosporin CA type by refluxion with an excess of pyridine, ascribed in Belgian Patent 593,777 "pyridine" or the words "as seems to be" are being suggested as an amine suitable for the art compound cephalosporin or seems to be taking the specification would be read as Belgian patent was one place those skilled in the art could convert cephalosporin C with pyridine, not free from doubt, we think it sentence would be read in the presence of the word "type" after "C" suggests that one compound (namely, cephalosporin) changed into *various* CA-type by refluxing it with an excess of the interpretation of the contro-inforced by the next sentence in which is as follows:

is applicable in general to the which numerous examples are giving corresponding derivatives of CA type wherein the tertiary 1 to the methyl group in the 3 iazine ring, and forms an inner oxy group in the 4 position.

containing the cephalosporin C nucleus" would provide some "motive" for those that followed him to concentrate their investigations on compounds possessing the cephalosporin CA nucleus, that motivation is a very general one, pointing to no particular one of the myriads of compounds, actual and potential, containing the cephalosporin CA nucleus.

The board, apparently recognizing the weakness of its position in attempting to arrive at an anticipation by combining the disclosures in examples 4 and 10 with the above-quoted teaching elsewhere in the patent of how to convert a particular, different cephalosporin C-type compound into cephalosporin CA-type compounds, postulates certain teachings which might have been in the reference patent any one of which, according to it, if present would have removed all doubt concerning the completeness of the anticipation. The simple answer to the board's argument is that these teachings were not contained in the Flynn patent and that we do not regard the teachings which were there and which were relied upon below as the equivalent of those which were postulated by the board. We do not read into references things that are not there.

Although the board declined to discuss four relatively recent decisions by this court in cases involving description requirements in various sections of the patent statute⁴ on the ground that "the issue [of anticipation] is essentially a factual one," it did consider the older case of *In re Armstrong*, 47 CCPA 1084, 280 F.2d 132, 126 USPQ 281 (1960), to be "apposite

³ These postulations were contained in the following passage from the board's opinion:

There would be no doubt of the completeness of the anticipation if, paraphrasing column 3, lines 47 to 50, the following language were present at the end of each of Examples 4 and 10:

"This compound is also readily converted into a compound of the cephalosporin CA type by refluxing in aqueous solution with an excess of pyridine, for example, as described in Belgian Patent 593,777."

Likewise, there would be no question of the applicability of column 3, lines 47 to 50, if that sentence were introduced by the words "Any one of the compounds of Examples 1 to 15 is also readily converted into compounds of the CA type ***" or "Any one of the herein specifically named cephalosporin C compounds is also readily converted into compounds of the CA type ***."

⁴ *In re Ruschig*, 52 CCPA 1238, 343 F.2d 965, 145 USPQ 274 (1965); *In re Kalm*, 54 CCPA 1466, 378 F.2d 959, 154 USPQ 10 (1967); *In re McLamore*, 54 CCPA 1544, 379 F.2d 985, 154 USPQ 114 (1967); and *In re Ruschig*, 54 CCPA 1551, 379 F.2d 990, 154 USPQ 118 (1967) (*Ruschig II*).

on this point." There this court reversed the board, finding support for process claims reciting the use of sodium carbonate although the example in the specification advanced as support for the claims used sodium hydroxide. However, in the first place, the *Armstrong* case was decided well before the line of cases beginning with *Ruschig II*, *supra*,⁵ which have significantly tightened up on the application of the description requirement in the first paragraph of 35 U.S.C. 112; and, in the second place, the opinion in *Armstrong* points out that appellants' specification stated that alkali hydroxides and alkali carbonates could be used "interchangeably" in their process. The opinion stresses this equivalency, which involved a tiny number of variables in comparison to the situation here. There are no equivalent "blaze marks," to quote the language of *Ruschig II*, in the case at hand.

Accordingly, we will not sustain the rejection on the ground on which it was made. Concerning the rejection as it is reformulated by the dissent, we express no opinion. It may be that the Patent Office should have relied upon the portions of Flynn on which the dissent relies, or it may be that they had very good reasons for not doing so. In any event, they did not rely on those teachings in Flynn, and appellants have therefore had no opportunity to comment thereon. We do not conceive that it is part of our duty to make better rejections for the Patent Office, even if we could be sure that we really were making a "better rejection," nor do we think that it would be consistent with the requirements of due process for us to do so for the first time on appeal, without notice to the affected party.

[2] Furthermore, we point out that we are not granting appellants a patent, if that is what the dissent means by "bestowing on the applicants a license to litigate." We are simply reversing a rejection on the ground that the claim on appeal is anticipated under § 102 by Flynn. It may well be that it is unpatentable because obvious under § 103 in view of Flynn,

[3] but no such rejection is before us. The Patent Office is free to make such a rejection after our decision in this case should it think it appropriate. *In re Ruschig*, 54 CCPA 1551, 379 F.2d 990, 154 USPQ 118 (1967); and *In re Fisher*, 58 CCPA —, 448 F.2d 1406, 171 USPQ 292 (1971). In any event, it is the Patent Office which grants patents, not this [4] court. It may further be observed that

⁵ Among the most recent of these are *In re Ahlbrecht*, 58 CCPA 848, 435 F.2d 908, 911, 168 USPQ 293, 296 (1971); *In re Lukach*, 58 CCPA 1233, 442 F.2d 967, 969, 169 USPQ 795, 796 (1971); and *Fields v. Conover*, 58 CCPA 1366, 443 F.2d 1386, 1391-92, 170 USPQ 276, 279-80 (1971).

it is not now the practice in this court, if it ever was, to apply a different standard in cases which are in "complex areas of technology" than we do in easily understood cases.

The decision of the board is reversed.

BALDWIN, Judge, concurring, with whom ALMOND, Judge, joins.

While I agree that the disclosure in the Flynn patent is insufficient to constitute an anticipation of the claimed invention, I cannot agree with the language of the principal opinion that for the rejection based on an anticipation to have been proper, "the Flynn reference must clearly and unequivocally disclose the claimed compound or direct those skilled in the art to the compound without any need for picking, choosing, and combining various disclosures not directly related to each other by the teachings of the cited reference."

The test which determines whether an invention has been anticipated by a reference is whether the description of the invention in the reference is "sufficient to put the public in possession of the invention." In re LeGrice, 49 CCPA 1124, 1131, 301 F.2d 929, 933, 133 USPQ 365, 369 (1962), citing *Curtis on Patents*, 3d ed., Sec. 378 and *Seymore v. Osborne*, 78 U.S. (11 Wall.) 516, 555 (1870). See also In re Brown, 51 CCPA 1254, 329 F.2d 1006, 141 USPQ 245 (1964); In re Sheppard, 52 CCPA 859, 339 F.2d 238, 144 USPQ 42 (1964); In re Bird, 52 CCPA 1290, 344 F.2d 979, 145 USPQ 418 (1965); In re Borst, 52 CCPA 1398, 345 F.2d 851, 145 USPQ 554 (1965); In re Baranaukas, 55 CCPA 1204, 395 F.2d 805, 158 USPQ 24 (1968); In re Hoeksema, 55 CCPA 1493, 399 F.2d 269, 158 USPQ 596 (1968); In re Wilder, 57 CCPA 1314, 429 F.2d 447, 166 USPQ 545 (1970); and In re Moore, 58 CCPA 1341, 444 F.2d 572, 170 USPQ 260 (1971). I find it unreasonable to assume that Judge Rich and Judge Lane intend to overrule this long line of cases sub silentio. If what they intend is merely to rephrase the accepted test so as to simplify its application, they have missed the mark.

The language used in the principal opinion would not in fact simplify the determination of the suitability of a reference as an anticipation under 35 U.S.C. 102. That language requires the tribunal to analyze the teachings of a reference to determine which are equivocal and which are unequivocal. It must also be determined which disclosures are directly related to each other by the teachings of the reference, thus making picking and choosing proper, and which disclosures are only indirectly related, or are not related at all. This is no simpler than reading the reference as a whole and determining what it fairly teaches to one of ordinary skill in the art.

The more important difficulty with the position taken in the principal opinion is that it misdirects the inquiry. It directs the tribunal to analyze the structure of the reference rather than its content. The real question is not how logically the various disclosures in a reference are related to each other, it is rather *what the reference fairly teaches to one of ordinary skill in the art*, no matter how ineptly it does so. Of course, the more logically the reference is laid out the clearer will be its teachings and the easier will be the job of those who must interpret it. But the law requires us to determine whether the invention has been *identically* described, *not* whether it has been *logically* described by the reference.

The Flynn reference has been described in both the principal opinion and the dissent. I will therefore merely state what I would consider that reference fairly teaches to one of ordinary skill in the art. Flynn does disclose the cephalosporin C_A-type precursor of the instantly claimed C_A-type compound. The precursor is one of approximately 38 C-type compounds specifically disclosed. Flynn teaches how C-type compounds can be converted to C_C-type compounds by heating with water under acid conditions, or converted to C_A-type compounds by refluxing in an aqueous solution with an excess of a tertiary amine. Pyridine is specifically referred to as an example of a tertiary amine which will work, but a list of over 15 other tertiary amines is given. With regard to antibacterial effect, Flynn discloses that C_C-type compounds are not as good as C-type compounds, and C-type compounds are not as good as C_A-type compounds. As pointed out by the dissent, Flynn considered the C_C-type and C_A-type analogues of the specifically disclosed C-type compounds to be some of the compounds "available in accordance with the present invention."

I would not place as much weight as the dissent does on Flynn's statement that the C_C-type and C_A-type analogues were considered within the scope of the invention. Such statements in the specification regarding the breadth of the invention are generally too speculative to be given great weight. In the instant case, all that statement does is focus some additional attention on C_C-type compounds and C_A-type compounds. In my view, that attention is not a significant addition to the disclosure, since Flynn's remarks regarding the antibacterial activity of the compounds are sufficient to emphasize the C_A-type compounds as the most desirable. The difficulty is that Flynn gives 38 or so possible precursors and 15 or so tertiary amines which will react with those precursors to form C_A-

the more important difficulty with the *tion taken* in the principal opinion is that *is indirects the inquiry*. It directs the tribunal to analyze the structure of the reference rather than its content. The real question is not how really the various disclosures in a reference related to each other, it is rather *what the reference fairly teaches to one of ordinary skill in the art*, no matter how ineptly it does so. Of course, the more logically the reference is laid the clearer will be its teachings and the *er* will be the job of those who must interpret it. But the law requires us to determine whether the invention has been *identically* described, *not* whether it has been *logically* described by the reference.

The Flynn reference has been described in the principal opinion and the dissent. I therefore merely state what I would consider that reference fairly teaches to one of ordinary skill in the art. Flynn does disclose a cephalosporin C_A-type precursor of the only claimed C_A-type compound. The precursor is one of approximately 38 C-type compounds specifically disclosed. Flynn teaches how C-type compounds can be converted to C_C-type compounds by heating water under acid conditions, or converted to C_A-type compounds by refluxing in an aqueous solution with an excess of a tertiary amine. Pyridine is specifically referred to as an example of a tertiary amine which will work, a list of over 15 other tertiary amines is given. With regard to antibacterial effect, it discloses that C_C-type compounds are as good as C-type compounds, and C-type compounds are not as good as C_A-type compounds. As pointed out by the dissent, Flynn considered the C_C-type and C_A-type analogues of the specifically disclosed C-type compounds to be some of the compounds available in accordance with the present invention.

I would not place as much weight as the dissent does on Flynn's statement that the C_C- and C_A-type analogues were considered in the scope of the invention. Such statements in the specification regarding the nature of the invention are generally too relative to be given great weight. In the dissent's case, all that statement does is focus additional attention on C_C-type compounds and C_A-type compounds. In my view, attention is not a significant addition to disclosure, since Flynn's remarks regarding the antibacterial activity of the compounds are sufficient to emphasize the C_A-compounds as the most desirable. The point is that Flynn gives 38 or so possible precursors and 15 or so tertiary amines which react with those precursors to form C_A-

type compounds. The Flynn disclosure, considered as a whole, does not sufficiently direct one skilled in the art to the claimed compound.

I disagree with the principal opinion on one last point. The opinion seems to suggest that we violate due process whenever we consider portions of a reference not specifically mentioned by the examiner or the board. I know of no requirement that the examiner and the board must list the sentences in the reference upon which they rely, nor can I see any sense in imposing such a requirement. All of the disclosure of a reference must be considered for what it fairly teaches one of ordinary skill in the art. In re Meinhardt, 55 CCPA 1000, 1004, 392 F.2d 273, 276, 157 USPQ 270, 272 (1968). As Judge Smith aptly stated in Meinhardt:

[T]he board relied on the same [reference] as the examiner to sustain the rejection. Assuming arguendo that the board relied on a portion of the [reference] ignored by the examiner, this could not constitute a new ground of rejection in view of In re Azorlosa, 44 CCPA 826, 241 F.2d 939, 113 USPQ 156 (1957), which holds, in pertinent part, that it is proper for the court and necessarily, the board, to consider everything that a reference discloses.

In re Meinhardt, *supra*, 55 CCPA at 1008-09, 392 F.2d at 280, 157 USPQ at 275. See also In re Halley, 49 CCPA 793, 296 F.2d 774, 132 USPQ 16 (1961); In re Van Mater, 52 CCPA 1076, 341 F.2d 117, 144 USPQ 421 (1965).

WORLEY, Chief Judge, dissenting.

I cannot agree with the majority that cephaloridine is not "described" in the Flynn patent in the sense of 35 U.S.C. 102(e).

It cannot be said, of course, that cephaloridine *per se* is *explicitly* named by Flynn, but a clear implicit description is sufficient. In re Baranaukas, 43 CCPA 727, 228 F.2d 413, 108 USPQ 226 (1955). Reference to the Flynn disclosure will establish, I submit, that such a description exists in the present instance.

The principal opinion has set forth portions of the generic and more specific disclosure of Flynn relied on by the board. The class of cephalosporin compounds disclosed generically by Flynn may be divided into several groups, of which the groups designated as cephalosporin C type and cephalosporin C_A type (cephaloridine is a C_A type) are of particular interest here.¹ After observing that "in

¹ For purposes here, cephalosporin C_A type compounds differ from cephalosporin C type compounds in the R¹ substituent attached to the methyl group located at the 3 position of the basic cephalosporin (cephem) nucleus. The C_A type

general, those compounds which possess the cephalosporin C_A nucleus are more effective antibacterially than those containing the cephalosporin C nucleus," Flynn goes on to name and describe several specific compounds having the cephalosporin C nucleus:

The following examples, together with the [15] operating examples appearing hereinafter, will illustrate the types of compounds available in accordance with the present invention:

[There follows a list of 24 specific 7-acylamidocephalosporanic acids, i.e., cephalosporin C type compounds. As noted by the board, two of the 15 operating examples referred to, examples 4 and 10, describe the potassium and sodium salts of 7-(2'-thienyl-acetamido) cephalosporanic acid (the sodium salt is known commercially as "cephalothin"). Appellant reacts that particular cephalosporanic acid with the tertiary amine pyridine to obtain the claimed cephalosporin C_A type compound, cephaloridine.]

and the like, including the cephalosporin C_A and cephalosporin C_C analogues thereof. [Emphasis supplied.]

There can be no doubt from the above disclosure that Flynn regarded the cephalosporin C_A analogues of each of the mentioned cephalosporin C type compounds to form an integral part of his disclosed invention. In particular, it is evident that Flynn does explicitly disclose the cephalosporin C_A analogues of Examples 4 and 10. As to how to obtain those C_A analogues from cephalosporin C type compounds, he states that compounds of the cephalosporin C_A class "can be obtained by applying to appropriate 7-acylamidocephalosporanic acids the conversion procedures of Belgian Patent 593,777." Flynn had earlier stated, as pointed out by the board and majority here, just what those "conversion procedures" are, viz., that "Cephalosporin C is also readily converted into compounds of the cephalosporin C_A type by refluxing in aqueous solution with an excess of pyridine, for example, as described in Belgian Patent 593,777."² [Emphasis supplied.]

Compounds have a tertiary amine attached to that methyl group, whereas the C type compounds have an acyloxy group so attached. See the formula and definitions under "The Rejection" portion of the principal opinion. Cephaloridine has a pyridine radical attached to the 3-methyl group.

² Belgian 593,777 does indeed disclose obtaining of "antibiotic substances which are transformation products of Cephalosporin C and are called

I think it is clear that Flynn directs one of ordinary skill in the art, who is interested in particular cephalosporin C_A analogues of the 37 or so cephalosporin C type compounds Flynn specifically discloses, to prepare them by reacting the appropriate 7-acylamido cephalosporanic acid with the particular tertiaryamine pyridine. Following those instructions, one of ordinary skill in this art would easily prepare the C_A (pyridine) analogue of the particular cephalosporin C type compound described in Examples 4 and 10, which analogue is cephaloridine. Each and every one of the C_A (pyridine) analogues of that relatively small number of cephalosporin C compounds has been effectively, or implicitly, described by Flynn. To be sure, appellant is claiming only one of them, but it is no less described than any of the others.

From what has been said of Flynn, it should be evident that there is no need in this case for those skilled in the art to resort to picking and choosing various disclosures unrelated to each other by the reference teachings, as the principal opinion implies. On the contrary, the disclosures of cephalosporin C compounds, cephalosporin C_A compounds, and how to make them are all interrelated by Flynn himself. It should also be evident that the reference itself contains the full equivalent of the board's "postulations", which are quoted in footnote 3 and later deprecated in the principal opinion. Finally, it should be evident that the rejection rationale as stated herein is substantially identical to—not a reformulation of—that expressed by the board.

The principal opinion also criticizes the board for reading into references "things that are not there." My difficulty with that position stems from its disregard for the "things"—or "blaze marks"—that are there. In my opinion, the majority is groping for reversible error where none exists. As far back as 40 years, and over the years since, it has been a firm principle that this court would not reverse decisions of the tribunals below in highly complex areas of technology unless manifest error was shown. See, e.g., *In re Wietzel*, 17 CCPA 1079, 39 F.2d 669, 5 USPQ 177 (1930); *In re Bertsch*, 30 CCPA 813, 132 F.2d 1014, 56 USPQ 379 (1942); *In re Stoll*, 34 CCPA 1058, 161 F.2d 241, 73 USPQ 440 (1947). Needless to say, such error has not been shown here.

Although the majority would undoubtedly disclaim the notion, I cannot help but feel that

Cephalosporin C_A compounds" by "treatment of Cephalosporin C in aqueous solution with a weak, tertiary base, for example pyridine, collidine or quinoline. If pyridine is used, the antibiotic obtained is called Cephalosporin C_A (pyridine)."

it is resolving doubt on the issue presented in favor of the applicants. In doing so, this court is not doing the applicants or the public any favor. Rather it is bestowing on the applicants a license to litigate of dubious validity at a time when, it is reliably estimated, 80% of contested patents are being held invalid in other federal courts. And the other sad result here is to take from the public that which is already theirs by imposing on them a monopoly that should not exist. Appellants have given the public nothing it had not already been given by Flynn. I would remind my colleagues that patents are not like party favors to be passed out at random. The enabling statutes established under the Constitution clearly require more than appellants have offered as a quid pro quo to the public in exchange for the monopoly the majority awards them.

I find no error in the board's decision, and would affirm.

Court of Customs and Patent Appeals

In re MANTELL, SMITH, GALIANO, AND RANKIN

No. 8577 Decided Feb. 17, 1972

PATENTS

Particular patents—Formaldehyde

Mantell, Smith, Galiano, and Rankin, Formaldehyde Block Copolymers and Processes, claims 6, 16, and 18 of application allowed; claims 1 and 3 refused.

Appeal from Board of Appeals of the Patent Office.

Application for patent of Gerald J. Mantell, Wayne E. Smith, Francis R. Galiano, and David Rankin, Serial No. 313,192, filed Oct. 2, 1963; Patent Office Group 140. From decision rejecting claims 1, 3, 6, 8, 9, 11, 12, 16, and 18, applicants appeal. Affirmed as to claims 1 and 3; reversed as to claims 6, 16, and 18; remanded as to claims 8, 9, 11, and 12.

WILLIAM H. DRUMMOND, Phoenix, Ariz., ERIC P. SCHELLIN, Arlington, Va., and RICHARD L. KELLY, Kansas City, Mo., for appellants.
S. WM. COCHRAN (FRED W. SHERLING of counsel) for Commissioner of Patents.

ains incl udes the art engines and more as it applies to fuel systems therfor." Sub- carburetors fall ore realistic descrip- which appellants

ne full knowledge by art in the field of his gs of the subsonic uretors concerning for varying the flow at are properly com- ings of the Eversole I uction reduction, i.e., automobile exhaust intaining the speed of through the venturi wide range of intake he argument that one operate the two sets of one the speed of the allegedly subsonic, is sonic, is irrelevant. ss is not whether the ce may be bodily in her reference. In re 719, 416 F.2d 1385, 549-50 (1969); In re 1123, 1126, 329 F.2d 30, 32 (1964). Rather, her combined teachings object matter obvious.

Qualified Third Party evaluation of a claimed d. by an impartial, is a valuable indication ness of an invention. th testing done by an ch an evaluation must nvention with the closest e meaningful. See In re 1865, 869, 197 USPQ 8; In re Holladay, 584 JSPQ 516, 518 (CCPA there is no basis for invention to the prior ude whether or not it is or and therefore unob-

data, while impressive, the claimed invention for art, the Eversole I ly, this evaluation does facie case of obviousness claimed device is unex- o the prior art. To the prior art Eversole I car- es for sonic velocity of the venturi throat over a e manifold conditions, it

too would be expected to reduce pollutant levels in an automobile's exhaust.

Accordingly, for the reasons set forth herein, the decision of the board is affirmed.

Affirmed.

Court of Customs and Patent Appeals

In re Meyer

No. 79-505

Decided June 7, 1979

PATENTS

1. Patentability — Composition of matter (§51.30)

Patentability — Invention — In general (§51.501)

Pleading and practice in Patent Office — Rejections (§54.7)

Rejection under Section 103 of claimed process that cited art merely renders prima facie obvious is reversed on appeal in which showing of record adequately rebuts inference of obviousness raised by cited art.

2. Patentability — Anticipation — In general (§51.201)

Patentability — Invention — In general (§51.501)

Pleading and practice in Patent Office — Rejections (§54.7)

Sole ground of rejection of examiner who expressly stated that statutory ground of rejection was 35 U.S.C. 103, never mentioned Section 102, and never asserted that most pertinent reference anticipated claimed subject matter is based on Section 103; Court of Customs and Patent Appeals declines to rely on conjecture as basis for ascertaining what statutory ground of rejection examiner might have had in mind.

3. Board of Appeals — Issues determined (§19.30)

Board of Appeals — Procedure and practice (§19.45)

Patentability — Anticipation — In general (§51.201)

Patentability — Invention — In general (§51.501)

Pleading and practice in Patent Office — Rejections (§54.7)

Pleading and practice in Patent Office — Rules effect (§54.9)

Board of Appeals' reliance on Court of Customs and Patent Appeals' cases that have used such phrases as "anticipation is the epitome of obviousness" or "anticipation is the ultimate in obviousness" to support its conclusion that in rejecting claims under Section 102 on appeal from examiner's rejection based solely on Section 103 if had not made new ground of rejection is totally misplaced; use in those cases of those phrases is nothing more than recognition of common sense fact that rejection for obviousness under Section 103 can be based on reference that happens to anticipate claimed subject matter; those cases do not provide license for board to shift statutory basis of rejection from Section 103 to 102 while denying appellant procedural due process provided for by Patent Rule 196(b).

4. Patentability — Composition of matter (§51.30)

Patentability — Anticipation — In general (§51.201)

Patentability — Invention — Specific cases — Chemical (§51.5093)

Words and phrases (§70)

Genus, "alkaline chlorine or bromine solution," does not identically disclose or describe, within meaning of Section 102, species alkali metal hypochlorite, since genus would include untold number of species; expression "alkaline chlorine or bromine solution" includes any solution of chlorine or bromine that is basic, that is, that has pH greater than 7.

Particular patents — 2-Nitrobenzaldehyde Preparation

Meyer; Process for the Preparation of 2-Nitrobenzaldehyde and Intermediates Therefor, rejection of claims 2-6, and 9-12, reversed.

Appeal from Patent and Trademark Office Board of Appeals.

Application for patent of Horst Meyer, Serial No. 557,296, filed Mar. 11, 1975. From decision rejecting claims 2-6, and 9-12, applicant appeals. Reversed.

Bruce M. Collins, and Jacobs & Jacobs, P.C., both of New York, N.Y., for appellant.

Joseph F. Nakamura (Jack E. Armore, of counsel) for Commissioner of Patents and Trademarks.

Before Markey, Chief Judge, Rich, Baldwin, and Miller, Associate Judges, and Newman,* Judge.

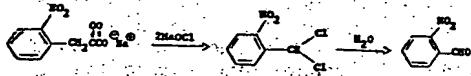
Newman, Judge.

This is an appeal from the decision of the Patent and Trademark Office (PTO) Board of Appeals (board) sustaining the examiner's rejection of claims 2-6, and 9-12, of application serial No. 557,296, filed 11 March 1975, for "Process for the Preparation of 2-Nitrobenzaldehyde and Intermediates Therefor." We reverse.

Background

The Invention

The compound, 2-nitrobenzaldehyde, has been known for more than 80 years. It can be used, inter alia, as an intermediate in the production of the pharmaceutically active 4-nitrophenyl-1, 4-dihydropyridine derivatives. Appellant's invention resides in an industrially satisfactory process for the production of 2-nitrobenzaldehyde. Specifically, an alkali metal salt of a 2-nitrophenylpyruvic acid is reacted with an aqueous solution of an alkali metal hypochlorite to yield 2-nitrobenzylidene chloride, which compound is then subjected to aqueous hydrolysis at a temperature of from about 20°C to about 150°C to produce 2-nitrobenzaldehyde. Using sodium as the alkali metal, the process can be diagrammatically depicted as follows:



Advantageously, the 2-nitrophenylpyruvic acid can be prepared by treating 2-nitrotoluene with a diester of oxalic acid and then using it directly without isolation. Claim 11 is illustrative of the appealed claims:

11. The process for the preparation of 2-nitrobenzaldehyde which comprises treating an alkali metal salt of the corresponding 2-nitrophenylpyruvic acid with an alkali metal hypochlorite in an aqueous medium to yield the corresponding 2-nitrobenzylidene chloride and sub-

* The Honorable Bernard Newman, United States Customs Court, sitting by designation.

* The nature of the diester of oxalic acid is not critical and generally it is of the formula $(COOR)_2$ in which R is lower alkyl or aralkyl.

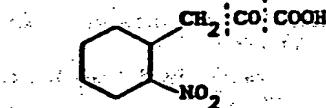
jecting said 2-nitrobenzylidene chloride to aqueous hydrolysis at a temperature of from about 20° to about 150°C.

Among the advantages of appellant's invention is that the starting materials, the 2-nitrotoluenes and oxalic acid diesters, are readily-accessible in adequate quantity, and the end product is obtained from the hydrolysis in high yield and high purity.

Prior Art

Reissert,² the most pertinent reference of record, discloses, inter alia, the oxidation of 2-nitrophenylpyruvic acid using various oxidizing agents. The oxidation is generally described as follows:

Upon the oxidation, which was studied very carefully and under a large number of different conditions in particular on the o-nitrophenyl pyruvic acid, the side chain is broken apart at one of the two places indicated by dashed lines in the following diagram



and either o-nitrophenyl acetic acid is produced or o-nitrobenzoic acid or o-nitrobenzaldehyde. Upon oxidation by alkaline chlorine or bromine solution, halogen-containing products are furthermore formed.

Subsequent to this general description, Reissert describes specific oxidation experiments. These include, inter alia, oxidation experiment (d) which uses an alkaline bromine solution, specifically sodium hypobromite, and oxidation experiment (e) which uses calcium hypochlorite.³ Use of sodium hypobromite resulted in the production of 2-nitrobenzylidene bromide, which compound was treated with sodium carbonate to remove the bromine, and then treated with phenylhydrazine acetate to

² Reissert, The Action of Ethyl Oxalate and Sodium Ethylate on Nitrotoluenes. Synthesis of Nitrated Phenylpyruvic Acids, 30 BERICHTE DER DEUTSCHEN CHEMISCHEN GESELLSCHAFT 1030-1053 (1897).

The transcript of record includes a translation of various excerpts from Reissert. Our discussion is based upon the translation.

³ The designation of the position of the nitro group as "O" or "ortho" is equivalent to the numerical designation "2." Hereinafter, only the numerical designation will be used.

⁴ It must be kept in mind that calcium is an alkaline earth metal in contradistinction to an alkali metal, such as sodium.

yield 2-nitrobenzaldehyde.⁵ Use of calcium resulted in an unhxar-taining oil together with a substance of the formula C_7H_7NO .

Cassebaum⁶ reviews methods for the production of benzaldehyde, none of which he, and concludes that the author notes the compound has been known for years, the literature still advantages method Cassebaum, then describes which he developed which produces 2-nitrophenyl nitromonoxide to produce 2-nitro-

Clarens⁷ discusses the hypochlorites and chlorates and bromates further discussion of this is not necessary since its relevant at best.

Feiser et al.,⁸ the last relied upon by the examiner, in various reactions using sodium hypochlorite to involve the production of benzaldehyde. As with Clarens, we further discuss this relevant.

Rebuttal Evidence

A declaration was submitted by Meyer, comparing Reissert with the process: By reacting 2-nitrophenylpyruvic acid with sodium hypobromite, the acid employed, was 100% conversion, the main product was 2-nitrobenzaldehyde. Repeating Reissert's work, it was possible to obtain a yield of 18% of 2-nitrobenzylidene bromide.

While Reissert does not mention hydrolysis of 2-nitrobenzylidene bromide, we will indicate that Reissert does not mention this step.

Cassebaum, The M. Nitrobenzaldehyde, 29 PRAKTIISCHE CHEMIE.

Our discussion is based upon various excerpts from Cassebaum's transcript of record.

Clarens, On the Spontaneous Hypochlorites to Chlorates and Bromates, 157 COMPTES DE L'ACADEMIE DES SCIENCES.

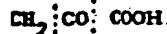
Feiser & Feiser, Reissert, Synthesis 1083-87 (1967).

nitrobenzylidene chloride to olysis at a temperature of 10° to about 150°C .

antages of appellant's in-
starting materials, the 2-
d oxalic acid diesters, are
in adequate quantity, and
it is obtained from the
h yield and high purity.

most pertinent reference of
inter alia, the oxidation of
uric acid using various ox-
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idation, which was studied
nd under a large number
ditions in particular on the
yruvic acid, the side chain
at one of the two places in-
hded lines in the following



NO₂

phenyl acetic acid is pro-
benzoic acid, or o-nitro-
pon oxidation by alkaline
mine solution, halogen-
ducts are furthermore
his general description,
specific oxidation ex-
clude, inter alia, oxidat-
l) which uses an alkaline
n, specifically sodium
oxidation experiment (e)
n hypochlorite. Use of
e resulted in the produc-
zylidene bromide, which
eated with sodium car-
the bromine, and then
nlyhydrazine acetate to

ction of Ethyl Oxalate and
Nitrotoluenes. Synthesis of
vic. Acids, 30 BERICHTE
HEN. CHEMISCHEN
030-1053 (1897).

record includes a transla-
rpts from Reissert. Our dis-
on the translation.

of the position of the nitro
ortho" is equivalent to the
"2." Hereinafter, only the
n will be used.
in mind that calcium is an
in contradistinction to an
sodium.

yield 2-nitrobenzaldehyde phenyl
hydrazone.⁵ Use of calcium hypochlorite
resulted in an unexamined chlorine-con-
taining oil together with a crystalline sub-
stance of the formula $\text{C}_8\text{H}_{12}\text{N}_2\text{O}_6$.

Cassebaum⁶ reviews various existing
methods for the production of 2-nitroben-
zaldehyde, none of which need be discussed
here, and concludes that they are unsatisfac-
tory. The author notes that even though the
compound has been known for more than 80
years, the literature still fails to describe any
advantageous method of producing it. Cassebaum
then describes the method
which he developed which comprises oxidizing
2-nitrophenylnitromethane with KMnO₄ to produce 2-nitrobenzaldehyde.

Clarens⁷ discusses the conversion of
hypochlorites and hypobromites to
chlorates and bromates, respectively. No
further discussion of this reference is deemed
necessary since its relevance is tenuous,
at best.

Feiser et al.⁸ the last of the references
relied upon by the examiner, describes
various reactions using sodium hypobromite
and sodium hypochlorite, none of which in-
volve the production of 2-nitroben-
zaldehyde. As with Clarens, we see no need
to further discuss this reference.

Rebuttal Evidence

A declaration was submitted by the in-
ventor, Meyer, comparing the yield ob-
tained by Reissert with that of the claimed
process. By reacting 2-nitrophenylpyruvic
acid with sodium hypobromite, Reissert's yield
of 2-nitrobenzylidene bromide, based upon
the acid employed, was 35.4%. Assuming
100% conversion, the maximum yield of 2-
nitrobenzaldehyde would only be 35.4%.
Repeating Reissert's work, Meyer was un-
able to obtain a yield of more than about
18% of 2-nitrobenzylidene bromide.

While Reissert does not expressly disclose
hydrolysis of 2-nitrobenzylidene bromide to yield
2-nitrobenzaldehyde, we will assume this to be
the case since appellant, in its brief before us, in-
dicates that Reissert does disclose the hydrolysis
step.

Cassebaum, The Manufacture of O-
Nitrobenzaldehyde, 29 JOURNAL FÜR
PRAKТИSCHE CHEMIE 59-64 (1965).

Our discussion is based on the translation of
various excerpts from Cassebaum included in
the transcript of record.

Clarens, On the Spontaneous Conversion of
Hypochlorites to Chlorates and Hypobromites to
Bromates, 157 COMTES RENOUS DE
L'ACADEMIE DES SCIENCES 216-19 (1913).

Feiser & Feiser, Reagents for Organic
Synthesis 1083-87 (1967).

In contradistinction to Reissert's use of
sodium hypobromite, when sodium
hypochlorite is used according to the claimed
process, the yield of 2-nitrobenzylidene
chloride, based upon the acid employed, is
64.3%.

Proceedings Below

In the examiner's answer, all the appealed
claims were rejected under 35 USC 103
over Reissert taken in view of Cassebaum,
Clarens, and Feiser et al. According to the
examiner, Reissert discloses the use of an
alkali metal hypobromite and equates the
hypobromite and hypochlorite.⁹ According
to, "the Reissert reference by itself is deemed
to teach every aspect of the claimed process
* * * [would have been,] at the very least[,]
* * * obvious over Reissert." Cassebaum,
Clarens, and Feiser et al. were relied upon
as further evidence that it would have been
obvious to use an alkali metal hypochlorite
in place of the alkali metal hypobromite of
Reissert.

With respect to appellant's uncontested
evidence of unexpectedly improved yields
with the alkali metal hypochlorite over the
alkali metal hypobromite, the examiner dis-
missed it as "not persuasive of paten-
tability."

The board affirmed the examiner. According
to the board, it is "fairly well agreed
that the difference in yields produced by the
hypochlorite solution is significant and not
readily explainable from the reference dis-
closures." With this in mind, the board
phrased the issue to be decided as follows:

[A]s observed by the examiner, the
Reissert reference, by itself, teaches every
aspect of the claimed process. Conse-
quently, if Reissert constitutes an *anticipation*, 35 USC 102(b), of the claimed sub-
ject matter, such rejection cannot be
avoided by a showing under 37 C.F.R.
1.132. On the other hand, if the cited art
merely renders the claimed process *prima
facie* obvious, the showing of record would
adequately rebut the inference of ob-
viousness raised by the cited art.
[Emphasis in original.]

The board concluded that Reissert antici-
pated the claimed invention, within the
meaning of 35 USC 102(b), since Reissert's
reference to "alkaline chlorine or bromine"

⁵ The examiner bases this conclusion on the
paragraph quoted from Reissert, *supra*. As will be
further discussed *infra*, in our view Reissert does
not equate an alkali metal hypobromite with an
alkali metal hypochlorite.

"solution" must be construed to mean *alkali* solutions of chlorine or bromine.

While the board apparently recognized that the examiner never mentioned 35 USC 102, it, nonetheless, anomalously concluded that a new ground of rejection was not being made since "anticipation is the epitome of obviousness."

In a request for reconsideration, appellant argued that the board denied it procedural due process inasmuch as the board, in effect, entered a new ground of rejection (under 35 USC 102(b)) while not affording appellant the procedural options provided for in 37 CFR 1.196(b).¹⁰

In addition, appellant submitted an affidavit by William Bertsche, the individual who prepared the translation of Reissert upon which the board relied. According to Bertsche, the German word actually used by Reissert, "alkalische," is an adjective and means alkaline or basic, referring to an alkaline condition capable of turning red litmus paper blue, and it cannot be translated to mean the noun, "alkali," as suggested by the board.¹¹

In its decision on reconsideration, the board considered the newly submitted Bertsche affidavit even though it repeated its assertion that it had not made a new ground of rejection. While not expressly disavowing its prior construction of Reissert, the board

¹⁰ § 1.196 Decision by the Board of Appeals. ***

(b) Should the Board of Appeals have knowledge of any grounds not involved in the appeal for rejecting any appealed claim, it may include in its decision a statement to that effect with its reasons for so holding, which statement shall constitute a rejection of the claims. The appellant may submit an appropriate amendment of the claims so rejected or a showing of facts, or both, and have the matter reconsidered by the primary examiner. The statement shall be binding upon the primary examiner unless an amendment or showing of facts not previously of record be made which, in the opinion of the primary examiner, avoids the additional ground for rejection stated in the decision. The applicant may waive such reconsideration before the primary examiner and have the case reconsidered by the Board of Appeals upon the same record before them. Where a request for such reconsideration is made the Board of Appeals shall, if necessary, render a new decision which shall include all grounds upon which a patent is refused. The applicant may waive reconsideration by the Board of Appeals and treat the decision, including the added grounds for rejection given by the Board of Appeals, as a final decision in the case.

¹¹ This is confirmed by Betteridge, *The New Cassell's German Dictionary* 4242 (1958).

did not repeat its prior statement that Reissert's reference to "alkalische" must be construed to mean "alkali." Instead, the board advanced a new theory for construing Reissert. Since Reissert's oxidation experiment (d) using sodium hypobromite is entitled "d) With alkaline bromine solution," and since this language is identical to Reissert's prior reference to "alkaline chlorine or bromine solution," Reissert must have had in mind the specific alkaline bromine solution of oxidation experiment (d) when he equated "alkaline bromine or chlorine solution." Thus, in the light of this new theory, the board repeated its conclusion that Reissert anticipated the claimed subject matter.

Opinion

[1] We will initially dispose of the examiner's rejection based on 35 USC 103 since the board did not expressly reverse it. See *In re Pritchard*, 59 CCPA 1284, 1292, 463 F.2d 1359, 1365, 175 USPQ 17, 22 (1972). The Meyer declaration, which is undisputed, indicates that when Reissert's sodium hypobromite is used the yield of 2-nitrobenzylidene bromide was 35.4% (based on the acid employed). In contradistinction, when the claimed sodium hypochlorite is used the yield of 2-nitrobenzylidene chloride was 64.3%.¹² As the board correctly recognized, "if the cited art merely renders the claimed process *prima facie* obvious, the showing of record would adequately rebut the inference of obviousness raised by the cited art." In *In re Von Schickh*, 53 CCPA 1352, 1355, 362 F.2d 824, 824, 150 USPQ 300, 302 (1966), the court stated:

Even assuming the process to be *prima facie* obvious from a consideration merely of the reactants, media, and steps employed, we think the invention as a whole must be deemed unobvious under 35 USC 103 by reason of the increase in yield obtained while using considerably less nitrating acid. We find no suggestion of this characteristic of the claimed process. It appears to be quite unexpected and, being part of the invention as a whole, it should be treated under the law as an unexpected property in compositions. [Citation omitted.]

¹² The examiner's answer did not contest that the use of an alkali metal hypochlorite produces an unexpectedly improved yield. The board stated that "it seems to be fairly well agreed that the difference in yields produced by the hypochlorite solution is significant and not readily explainable from the reference disclosures." The solicitor chose not to discuss appellant's evidence of nonobviousness.

Accordingly, the rejection under § 103 is reversed.

[2] Turning to the board 35 USC 102(b) in affirming the are convinced that this co ground of rejection. In *re E 632*, 176 USPQ 321 (CCP considering that the examiner's the statutory ground of 35 USC 103, that he never n and that he never asserted anticipated the claimed subj conclude that the sole gro was, indeed, § 103. We do conjecture as a basis for as statutory ground of rejectio might have had in mind.

[3] Recognizing the poss examiner may not have mat the board made the ment:

Although we realize th did not expressly frame being based on 35 USC 1 such to be clear from his event, this is not a new a tion, since it has been repeat participation is the epitome [Emphasis added.]

While it is true that prior c court have used such phrase tion is the epitome of obviousness is the ultimate in the board's reliance on thos port its conclusion that it h new ground of rejection is to The use in prior cases of the phrases is nothing more than the of the commonsense fact for obviousness under § 103 as a reference which happens to claimed subject matter. Tho provide a license for the bo statutory basis of rejection § 102 while denying a procedural due process pro 37 CFR 1.196(b). See *In re Eric Hughes*, 52 CCPA 1355, 145 USPQ 467 (1965). Since

¹³ It is clear the board based i § 102(b) since the board expr evidence of record would have rebased on obviousness.

¹⁴ See, e.g., *In re Grose*, 592 USPQ 57 (CCPA 1979); *In re S 947*, 186 USPQ 80 (CCPA 1975 494 F.2d 1399, 181 USPQ 641 (re Dailey, 479 F.2d 1398, 178 U 1973); *In re Kalm*, 54 CCPA 146 154 USPQ 10 (1967).

its prior statement that ice to "alkalische" must be an "alkali." Instead, the new theory for construing Reissert's oxidation experiment sodium hypobromite is an alkaline bromine solution, language is identical to reference to "alkaline chlorine solution," Reissert mind the specific alkaline of oxidation experimentated "alkaline bromine or." Thus, in the light of this board repeated its conclusion anticipated the claimed

Opinion

initially dispose of the claim based on 35 USC 103 did not expressly reverse it. *rd*, 59 CCPA 1284, 1292, 1365, 175 USPQ 17, 22 f. declaration, which it unes that when Reissert's title is used the yield of 2-bromide was 35.4% (based yed). In contradistinction, sodium hypochlorite is nitrobenzylidene chloride is the board correctly cited art merely renders *ss prima facie* obvious, the would adequately rebut obviousness raised by the Von Schickh, 53 CCPA 2d 821, 824, 150 USPQ he court stated:

g the process to be prima in a consideration merely its, media, and steps link the invention as a deemed unobvious under reason of the increase in while using considerably d. We find no suggestion eristic of the claimed is to be quite unexpected of the invention as a be treated under the law ected property in comion omitted.]

answer did not contest that metal hypochlorite produces improved yield. The board to be fairly well agreed that yields produced by the is significant and not ready the reference disclosures," not to discuss appellant's usness.

Accordingly, the rejection of the claims under §103 is reversed.

[2] Turning to the board's reliance on 35 USC 102(b) in affirming the examiner,¹³ we are convinced that this constituted a new ground of rejection. *In re Echard*, 471 F.2d 632, 176 USPQ 321 (CCPA 1973). Considering that the examiner expressly stated the statutory ground of rejection was 35 USC 103, that he never mentioned §102, and that he never asserted Reissert anticipated the claimed subject matter, we conclude that the sole ground of rejection was, indeed, §103. We decline to rely on conjecture as a basis for ascertaining what statutory ground of rejection the examiner might have had in mind.

[3] Recognizing the possibility that the examiner may not have made a §102 rejection, the board made the following statement:

Although we realize that the examiner did not expressly frame his rejection as being based on 35 USC 102, we consider such to be clear from his remarks. In any event, this is not a new ground of rejection, since it has been repeatedly held that anticipation is the epitome of obviousness. [Emphasis added.]

While it is true that prior cases¹⁴ from this court have used such phrases as "anticipation is the epitome of obviousness" or "anticipation is the ultimate in obviousness," the board's reliance on those cases to support its conclusion that it had not made a new ground of rejection is totally misplaced. The use in prior cases of the aforementioned phrases is nothing more than the recognition of the commonsense fact that a rejection for obviousness under §103 can be based on a reference which happens to anticipate the claimed subject matter. Those cases do not provide a license for the board to shift the statutory basis of rejection from §103 to §102 while denying appellant the procedural due process provided for by 37 CFR 1.196(b). See *In re Erchard*, *supra*; *In re Hughes*, 52 CCPA 1355, 345 F.2d 184, 145 USPQ 467 (1965). Since, as will be dis-

cussed hereinbelow, we disagree with the board on the merits of the §102(b) rejection, there is no need to remand the case for further proceedings below.

[4] For Reissert to constitute an anticipation, it must identically disclose or describe, *inter alia*, reacting an alkali metal salt of 2-nitrophenylpyruvic acid with an alkali metal hypochlorite. See *In re Marshall*, 578 F.2d 301, 198 USPQ 344 (CCPA 1978). The Bertsche affidavit supports the conclusion that the reference in the Reissert translation to "oxidation by alkaline chlorine or bromine solution" should be construed to mean oxidation by a *basic* chlorine or bromine solution, and not oxidation by an *alkali* solution of chlorine or bromine. The genus, "alkaline chlorine or bromine solution," does not identically disclose or describe, within the meaning of §102, the species alkali metal hypochlorite, since the genus would include an untold number of species.¹⁵ See *In re Jacobson*, 56 CCPA 982, 991, 407 F.2d 890, 896, 160 USPQ 795, 800 (1969). In apparent recognition of that fact, the board relied upon the additional disclosure by Reissert of oxidation with sodium hypobromite. According to the board, Reissert's teaching that "[u]pon oxidation by alkaline chlorine or bromine solution, halogen-containing products are furthermore formed," must be construed to be a direct reference to Reissert's specific oxidation experiment (d), to wit, oxidation with alkaline bromine solution (sodium hypobromite being specifically disclosed). Construing Reissert in this manner, the board concluded that Reissert equated sodium hypobromite with sodium hypochlorite. The problem with the board's interpretation is that it ignores the remainder of the Reissert disclosure, including oxidation experiment (e), i.e., oxidation with calcium hypochlorite, an "alkaline chlorine * * * solution." This reaction is described as producing, *inter alia*, a "chlorine-containing oil," which, needless to say, is a "halogen-containing" product. Thus, there is simply no reason to conclude that Reissert's generic reference to "alkaline chlorine or bromine solution" should be construed to refer only to specific oxidation experiment (d). Accordingly, since the aforementioned construction of Reissert by the board is without foundation, the board's rejection under §102(b) must fall.

¹³ It is clear the board based its affirmance on §102(b) since the board expressly stated the evidence of record would have rebutted a rejection based on obviousness.

¹⁴ See, e.g., *In re Grose*, 592 F.2d 1161, 201 USPQ 57 (CCPA 1979); *In re Skoner*, 517 F.2d 947, 186 USPQ 80 (CCPA 1975); *In re Pearson*, 494 F.2d 1399, 181 USPQ 641 (CCPA 1974); *In re Dailey*, 479 F.2d 1398, 178 USPQ 293 (CCPA 1973); *In re Kalm*, 54 CCPA 1466, 378 F.2d 959, 154 USPQ 10 (1967).

¹⁵ The expression "alkaline chlorine or bromine solution" would include any solution of chlorine or bromine which is basic, i.e., which has a pH greater than 7.

the trademark rights as a contributory is entitled to protect knowingly play a accomplishing the un-

undantly establishes no innocent, inadvertent predecessor of the product infringing term "conched up on its career re aid of Firestone entry into the self-plastic field, Firestone active and essential with respect to the providing Stix with and technical assistance 1964 Firestone supplied plastic film for the to the present it has backing sheets and completed product for

ing Firestone knew mark and, with the at it was the dominantly period it could make the product United's. When, in the use of "con and other advertisement's officials were tested in Shulman's counsel provided ch guided Stix, Stix, one informed of its promotional policies, advertising copy ture of a campaign

Co. v. Stephen L. 86, 588, 30 USPQ 330, denied, 299 U.S. 605 & Co. v. H. P. Cof- 819-20, 8 USPQ 420, art. denied, 284 U.S. Tergens Co. v. Bond- 2d 419, 424 (2d Cir. 275 U.S. 572 (1928); R. W. Bell Mfg. Co., 1896); Coca-Cola Co. ages, 64 F.Supp. 980, 446 (D. Mass. 1946), USPQ 518 (1st Cir.), 809, 75 USPQ 365 sts, Inc. v. Standard R.D. 386, 389 (S.D. Works v. Haeger Pot- 51, 553-54, 142 USPQ 4); American Infrac- 4-75 (D. Minn. 1963); Atchison, T. & S. F. 190 (S.D. Cal. 1947). Henkell Co., 60 F. 471, 392); 2 H. Nims, The petition and Trade- 4th ed. 1947).

Not only did Firestone process the product which contained the infringing term, it also actively aided, abetted and furthered Stix's entire advertising and promotional campaign in the use of "contact" and its invasion of United's trademark rights. That Firestone's executives were fully aware of the trademark implications of Stix's use of "contact" is evident both from the fact that when Shulman first proposed the idea, one of them suggested, "You might want to avoid it like the very plague," and from the further circumstance that at a subsequent time the same executive asked Shulman point-blank, "[A]re you going to ride on their [United's] coat-tails or are you going to try to make out this is CONTACT brand?" Other evidence abundantly establishes Firestone's knowing participation in Stix's wrongful actions. A clear case of contributory infringement is made out against Firestone, and the decree shall extend to it.

The foregoing shall constitute the Court's Findings of Fact and Conclusions of Law. Either party, within ten (10) days and upon five (5) days' notice to the other, may propose, consistent with the foregoing, additional Findings of Fact and Conclusions of Law.

Court of Customs and Patent Appeals

In re JACOBSON

No. 8100 Decided Mar. 6, 1969

PATENTS

1. Board of Appeals—In general (§ 19-05)

Pleading and practice in Patent Office—Rejections (§ 54.7)

Board's decision, affirming rejection of claims under 35 U.S.C. 102 as met by references, stated that claims appear directly readable upon references but that, in any event, they are unpatentable under section 103; on appeal from Board's decision, rejection under section 103 is before court; Board was not required to designate a new ground of rejection as such or as made pursuant to Rule 196(b); statutory requirement, as applicable to Board as to examiners, is section 132 which requires that applicant be notified of reasons for rejection so that he may be able to judge the propriety of continuing prosecution; rule of

reason must be applied to application of section 132 and Rule 196(b); while it is desirable that when Board makes a new rejection, or an old rejection on a new ground or statutory basis, it should so inform applicant, there is no magic in any particular form of words; when there is a shift in statutory basis of rejection from section 102 to 103, but exactly the same references are relied on for same disclosures and the section of statute is expressly identified, the Board's meaning and the newness of rejection being apparent from opinion as a whole, applicant is not prejudiced and cannot ignore rejection on ground that Board did not designate it as "new" or "under Rule 196(b)."—In re Jacobson (CCPA) 160 USPQ 795.

2. Affidavits—By Patent Office employee (§ 12.5)

Mere failure of reference to state the obvious is not cause for producing affidavit under Rule 107.—In re Jacobson (CCPA) 160 USPQ 795.

Particular patents—Polymerizes

Jacobson, Processing of Polymerizes, claims 1 to 13 of application refused.—In re Jacobson (CCPA) 160 USPQ 795.

Appeal from Board of Appeals of the Patent Office.

Application for patent of Ulf C. H. Jacobson, Serial No. 200,593, filed Apr. 30, 1962; Patent Office Group 140. From decision rejecting claims 1 to 18, applicant appeals. Affirmed.

JAMES E. BRYAN, Washington, D. C., for appellant.

JOSEPH SCHIMMEL (LUTRELLE F. PARKER of counsel) for Commissioner of Patents.

Before WORLEY, Chief Judge, and RICH, ALMOND, and BALDWIN, Associate Judges.

RICH, Judge.

This appeal is from the decision of the Patent Office Board of Appeals affirming the rejection of all claims in application serial No. 200,593, filed April 30, 1962, entitled "Processing of Polymerizes," a continuation-in-part of serial No. 690,259, filed October 15, 1957.

The Invention

The "processing" with which the application is concerned is a method of "dry-blending" thermoplastic materials, to be used for molding or extrusion, with the usual plasticizers, stabilizers, coloring, fillers, lubricants, and the like. Although the plasticizers and some of the other materials may be liquids,

they are added at such a rate and under such conditions that the mixture remains substantially dry in appearance. It is explained that certain prior art processes produced a hot gelled mass which, after cooling, had to be disintegrated or granulated to get a material suitable for use in molding or extrusion and it is stated as an object to avoid such gelling with the necessity of subsequent granulation. It is further explained that some thermoplastic materials, particularly "emulsion polymerizates," polyvinyl chloride for example, are fine powders unsuitable for use in extruders as well as difficult to blend with plasticizer, etc., and that a granular product must be produced therefrom with which to feed the extruder. It is desired to get such a product without producing an aggregate which has to be ground up or granulated and appellant does this in a blender.

A brief description of appellant's Example I will serve to illustrate. A blender consisting of a container with an agitator blade in its bottom, similar in construction to the common kitchen "Waring Blender" is used. This industrial version, however, has a capacity of 100 liters (about 26.5 gallons) and is driven by a 20 horsepower motor. Polyvinyl chloride emulsion polymerizate in the amount of 25 kg with minor amounts of other dry ingredients are charged into it and the rotor started at 1400 rpm while 7.5 kg of liquid plasticizer (diethyl phthalate) is added in a continuous stream during a 5-minute period. Rotor speed is then reduced to 700 rpm and, after 2 minutes, 5 kg additional plasticizer is added during 5 more minutes. After 2 minutes more, the product is discharged "as a dry, free-flowing granular material which could be processed in an extruder" to form electrical cable insulation. It is said that by this technique up to 100% by weight of plasticizer and other liquids can be added without getting a wet or sticky product.

Heat is an essential part of this processing. According to the disclosure, the necessary heat, which makes the polymer receptive to plasticizer and also causes the powder particles to agglomerate to a controlled extent to form larger granules, can be produced in the blender from the friction between the particles and between the particles and the rotor. However, the specification does not limit the source of heat to the energy produced by the rotor and explains that two other sources may be used additionally, even preferably. One is the use of a heating jacket on the blender whereby the time required for heating the charge

may be reduced" and the other is that "the plasticizer and other liquid constituents may be preheated to a temperature of about 100° C, for example." In Example I there is no mention of outside sources of heat so it is assumed the necessary heat is produced by friction. In Example IV, on the other hand, the blender has a jacket heated to 130° C and the plasticizer is heated to 130° C before addition. The rotor in that example is run at 700 rpm.

It is important to the process of the invention not to heat too much. The desired range is disclosed as about 60 to 170° C, which is "below the gelling temperature of the mixture." The specification explains:

Since the material does not gel in the blender, no disintegration or granulation of the product is necessary as it is discharged in granular form.

The Claims

There are two independent claims from which all others depend. Claim 10 is the more specific and reads (our emphasis):

10. A process for forming free-flowing granules from thermoplastic powder which comprises maintaining the powder in a confined zone as a rapidly moving suspension and at an elevated temperature *below the gelling temperature of the thermoplastic*, resulting from the heat generated at least in part by frictional and shearing forces between the powder particles and adding a liquid plasticizer to the suspension whereby the particles are fused to form granules containing plasticizer.

Claim 1, the other independent claim, is claim 10 with the italicized words omitted. The dependent claims, 2-9 and 11-13, will be discussed later.

The Rejection

The examiner rejected all claims, 1-13, "under 35 U.S.C. 102 as fully met by" or "met by" (a less emphatic legal equivalent) the following references:

Sandler 2,477,009 July 26, 1949
Samler 2,718,471 Sept. 20, 1955

In affirming, the board said:

We have considered appellant's several arguments but will sustain the rejection of all the claims on each of the references. While the claims appear directly readable upon the references, except for dependent claim 13 specifying partial vacuum, they are, in any event, clearly unpatentable under section 35 U.S.C.

103. In re Pye et al., 148 U [53 CCPA 877, 355 F.2d 641 (1

Before us, the Solicitor for the Office contends that the issues by the appeal encompass both invention under section 102 and obviousness under section 103, in view of the express reference to that section.

Appellant, on the contrary, only rejection of the claims fo by this Honorable Court is fully met by the Samler and references under 35 U.S.C. 103 seems to be his position that precluded from considering else—specifically, whether any unpatentable for obviousness under section 103—because "the observation of the Board that the claims patentable under Section 103 constitute a new rejection by the Board under Section 103 since there is no compliance with Rule 196(i) solicitor says the board's above-statement does comply with that

Is a Section 103 Rejection Bef

Preliminarily, it seems desirable to resolve this question since the contestants are taking diametrically opposite positions, it involves an procedural matter of frequency, and the propriety of rejection of certain claims depends on

The board cited In re Pye above-quoted passage. The relevant passage in Pye reads as follows:

The record reveals some agreement on the part of the Patent Office in agreeing on a statutory basis for rejection. ***

The difficulty in formulating a ground of rejection seems to arise from the failure to determine whether Touey [the referee] in fact disclose appellants' composition, so to be on the side, language appropriate to 35 U.S.C. 102 and 103 was. In close situations claims rejected on section 102 and alternative, section 103. But alternative rejection does not indicate the need for careful selection of the references to determine what is disclosed to the end applicant may be notified of the particularity required by section 102. Appellant does not seem to have been prejudiced by the referee, and has argued in the board that the issues of novelty and obviousness under section 103 are in view of both Touey and Scher. We will consider both issues.

Appellant here, on the other hand, relies on In re Hughes, 52 CCPA 345, 355 F.2d 184, 145 USPQ

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103. In re Pye et al., 148 USPQ 426 [58 CCPA 877, 355 F.2d 641 (1966)].

Before us, the Solicitor for the Patent Office contends that the issues presented by the appeal encompass both anticipation under section 102 and obviousness under section 103, in view of the board's express reference to that section.

Appellant, on the contrary, says "the only rejection of the claims for review by this Honorable Court is that as fully met by the Samler and Sandler references under 35 U.S.C. 102." It seems to be his position that we are precluded from considering anything else—specifically, whether any claim is unpatentable for obviousness under section 103—because "the observation by the Board that the claims were unpatentable under Section 103 did not constitute a new rejection by the Board under Section 103 since there was no compliance with Rule 196(b)." The solicitor says the board's above-quoted statement does comply with that rule.

Is a Section 103 Rejection Before Us?

Preliminarily, it seems desirable to resolve this question since the protagonists are taking diametrically opposed positions, it involves an important procedural matter of frequent occurrence, and the propriety of the rejection of certain claims depends on it.

The board cited In re Pye in the above-quoted passage. The most relevant passage in Pye reads as follows:

The record reveals some difficulty on the part of the Patent Office in agreeing on a statutory basis for the rejection. * * *

The difficulty in formulating a ground of rejection seems to have arisen from the failure to ascertain whether Touey [the reference] does in fact disclose appellants' claimed composition, so to be on the safe side, language appropriate to both 35 U.S.C. 102 and 103 was employed. In close situations claims may be rejected on section 102 and, in the alternative, section 103. But such an alternative rejection does not eliminate the need for careful scrutiny of the references to determine precisely what is disclosed to the end that the applicant may be notified with the particularity required by 35 U.S.C. 132. Appellant does not seem to have been prejudiced by the confusion here, and has argued in this appeal the issues of novelty and obviousness in view of both Touey and Fikentscher. We will consider both issues.

Appellant here, on the other hand, relies on In re Hughes, 52 CCPA 1855, 345 F.2d 184, 145 USPQ 467, 469,

(1965), a case in which we found that neither the examiner nor the board had specified any statutory basis for the rejection. We deduced, however, from the language of the Examiner's Answer that his rejection was based on section 102. The court divided as to what was the statutory basis of the board's affirmance, the majority saying:

Here, however the board's opinion did not provide adequate notice that a new statutory ground of rejection was being relied on. For all that appellant knew, from the vague language used by the board, the only rejection being passed upon was the one made by the examiner under section 102. Thus, if we were to consider, on this appeal, issues which arise under section 103, we would be doing so without affording appellant an opportunity to be heard in the administrative tribunals of the Patent Office.

The situation here is not that which the majority saw in Hughes. The board made it perfectly clear that, insofar as it might be necessary, i.e., to the extent that the references would not support the examiner's section 102 rejection, it was relying on section 103. Before making the statement above quoted, the board had recited that the examiner's rejections were, as to each reference, based on section 102. Appellant was very much aware of the board's partial shift in the statutory basis of the rejection, still based on the same references, as shown by his Request for Reconsideration, in which he said:

In the second complete paragraph on page 8 of the Board's Decision, the Board has gratuitously observed that the claims:

"are, in any event, clearly unpatentable under section 35 U.S.C. 103".

If this is, as it appears to be, a rejection under Rule 196(b), then it is requested that the Board specifically designate it as such or this gratuitous observation should be withdrawn. The rejection which has been affirmed is on the ground of *fully met* and that rejection obviously is not going to be sustained upon further appeal to the Court of Customs and Patent Appeals. Neither appellant nor that Court should have to speculate as to the grounds of the rejection.

We are not speculating, nor do we understand why appellant should be. This case is not like the Hughes case, nor governed thereby.

From the above quotation and other arguments, it appears to us that it is

appellant's theory that unless the board, as it more often does than not, says "This is a new rejection under Rule 196(b)," any new rejection it may make, in any other form of statement, can be ignored. To illustrate, the solicitor argues that there are four rejections before us: anticipation and obviousness in view of Samler, and anticipation and obviousness in view of Sandler. Appellant, however, insists that "the only rejection of the claims for review by this Honorable Court is that as fully met by the Samler and Sandler references under 35 U.S.C. 102." This theory is based on the alleged failure of the board to comply with Rule 196(b). It is not quite clear to us what is the basis of this allegation. Appellant has quoted, with emphasis, that part of the rule on which he relies, as follows:

Should the Board of Appeals have knowledge of any grounds not involved in the appeal for rejecting any appealed claim, it may include in its decision a statement to that effect with its reasons for so holding, which statement shall constitute a rejection of the claims.

He then states that "the observation of the Board concerning the alleged unpatentability of the claims under Section 103 did not comply with Rule 196(b)," which appears to imply it was because the board did not state "its reasons for so holding." At the same time, appellant seems to argue that the non-compliance resided in a failure to designate its section 103 rejection as "a rejection under Rule 196(b)."

[1] As to the first point, we think the board's reasons for holding unpatentability under section 103 are perfectly clear, namely, that whatever claim limitation could not be found expressly described in a single reference would nevertheless be obvious in view of the references. As to the second point, we find no express provision in statute, rule, or manual that requires the board to designate a new ground of rejection as such or as made "pursuant to Rule 196(b)." The statutory requirement, as applicable to the board as to examiners, is found in 35 U.S.C. 132, In re Hughes, *supra*. In re Jepson, 53 CCPA 1023, 357 F.2d 406, 148 USPQ 736 (1966), and it requires that an applicant be notified of the reasons for a rejection so that he may be able to judge the propriety of continuing prosecution.

It seems to us that a rule of reason must be applied to the application of 35 U.S.C. 132 and Rule 196(b) by both sides. It is certainly desirable that when

the board makes a new rejection, or an old rejection on a new ground or statutory basis, it should so inform the applicant. However, there is no magic in any particular form of words. When, as here, there is a shift in the statutory basis of a rejection, from section 102 to 103, but exactly the same references are relied on for the same disclosures and the section of the statute is expressly identified, the board's meaning and the newness of the rejection being apparent from the opinion as a whole, we do not consider that appellant has been prejudiced or can ignore it on the ground that the board did not designate it as "new" or "under Rule 196(b)."

Appellant insists that "no rejection as unpatentable over Samler [or Sandler] under Section 103 was ever presented to or considered by the Board of Appeals * * *." (Emphasis ours.) While we have to agree that the examiner did not present such a rejection, it is anomalous to say that having made such a rejection, the board did not consider it. Appellant cannot pretend to have been trapped or surprised. The newness of the rejection fully impressed itself on his attorney's consciousness as demonstrated by the Request for Reconsideration in which he said, "If this is, as it appears to be, a rejection under Rule 196(b), then it is requested that the Board specifically designate it as such * * *." He also asked the board to "make it clear as to just what section of the Statute is relied upon." We think the board did just that; it specifically sections 102 and 103, alternatively. Yet appellant, neither in his Request for Reconsideration nor in this court, has had a word to say in response to any rejection based on section 103, electing to stand on technical arguments to the effect that no such rejection exists.

Our conclusion is that, under the circumstances of this case, there is a section 103 rejection before us, which we shall consider in due course. But first we shall consider the section 102 rejection, made by the examiner, and affirmed by the board as to all claims except claim 18.

Opinion

Both references, Samler and Sandler, are directed to the same purpose as appellant's invention, the blending of powdered plastics with liquid plasticizers, fillers, stabilizers, pigments, etc., to prepare them for molding or extrusion. Both refer to vinyl polymers. Both are "dry" processes. Both produce a free-flowing, granular product. Both recognize the necessity of heating the materials to the right degree during

processing and both describe the three ways of heating wpellant describes: (1) by heat of the ingredients before addi (2) by heating the mixing one way or another. The thir of heat, which appellant define claims as "generated at least by frictional and shearing between the powder particles," i center of the dispute here. A gets the kinetic energy to do t the rotating blade in his mix in claim language, has the "maintaining the powder in a zone as a rapidly moving st * * *." Doing this to the par recites in his claims, generates reason of "frictional and forces between the powder p What he means by "shearing" is not made clear since the woring" appears nowhere in his tion, only in the claims. One pellant's arguments is that th require both frictional and forces, but what the difference how it is obtained remains un unless explanation is to be the fact that appellant's mix high-speed rotating impeller references do not. But if an striking particles produces forces it is not seen why particing each other or other objects do the same. We cannot, un circumstances, give any weight reference to both friction and forces.

Referring more specifically references, Samler shows an in his patent, which is entitled ing Method and Apparatus," of a conical hopper into which tity of powdered or granular plastic is placed. At the bot screw feeder which moves mate the hopper into a curved pi carries material from the b the hopper around an external back into the top of the hopp reenters, striking a baffle an Propulsion of the plastic pa produced by means of an i blown into the pipe at the screw feeder. A short distanc the gas inlet, the liquid mate injected into the particles fed from a pump. Speaking materials moving through th pipe, the patent states:

The particles suspended are caused to move at high preferably from 1500 to 4000 minute. The bend in the produces extreme turbulence causes any formed agglom break up and further disperse

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processing and both describe two of the three ways of heating which appellant describes: (1) by heating some of the ingredients before addition and (2) by heating the mixing vessel in one way or another. The third source of heat, which appellant defines in his claims as "generated at least in part by frictional and shearing forces between the powder particles," is at the center of the dispute here. Appellant gets the kinetic energy to do this from the rotating blade in his mixer which, in claim language, has the effect of "maintaining the powder in a confined zone as a rapidly moving suspension * * *." Doing this to the particles, he recites in his claims, generates heat by reason of "frictional and shearing forces between the powder particles." What he means by "shearing" forces is not made clear since the word "shearing" appears nowhere in his specification, only in the claims. One of appellant's arguments is that the claims require both frictional and shearing forces, but what the difference is and how it is obtained remains unexplained unless explanation is to be found in the fact that appellant's mixer has a high-speed rotating impeller and the references do not. But if an impeller striking particles produces shearing forces it is not seen why particles striking each other or other objects will not do the same. We cannot, under these circumstances, give any weight to the reference to both friction and shearing forces.

Referring more specifically to the references, Samler shows an apparatus in his patent, which is entitled "Blending Method and Apparatus," consisting of a conical hopper into which a quantity of powdered or granular thermoplastic is placed. At the bottom is a screw feeder which moves material from the hopper into a curved pipe which carries material from the bottom of the hopper around an external loop and back into the top of the hopper where it reenters, striking a baffle and falling. Propulsion of the plastic particles is produced by means of an inert gas blown into the pipe at the end of the screw feeder. A short distance beyond the gas inlet, the liquid materials are injected into the particles by a jet fed from a pump. Speaking of the materials moving through the curved pipe, the patent states:

The particles suspended in the gas are caused to move at high velocities, preferably from 1500 to 4000 feet per minute. The bend in the tube 23 produces extreme turbulence which causes any formed agglomerates to break up and further disperse.

Appellant and the Patent Office both rely on this passage to further their positions. The Patent Office says it discloses the claimed step of "maintaining the powder in a confined zone as a rapidly moving suspension" and that the high speed and turbulence will produce "frictional and shearing forces between the powder particles" with resulting generation of heat. We agree. Appellant argues that the passage shows that Samler does not get granules, which is the object of his invention, because of the statement that any agglomerates will be broken up. We think it is tolerably clear, however, that breaking up agglomerates is a relative matter and that while big agglomerates or lumps may be broken up, little ones, properly denoted as "granules," can and do remain in Samler's process as an end product. After a few passes through his machine, Samler necessarily stops blowing the particles through the curved tube and eventually dumps the hopper through a discharge spout at the bottom. In his hopper are stirring or circulating devices which lift the material up and allow it to fall through space in which there is gas turbulence. No doubt his particles, coated with plasticizer and subjected to heating, are going to agglomerate to some extent in the hopper (else why would he speak of breaking up agglomerates?) before they reach the discharge. He describes his discharged product as a "particle mass in free-flowing condition." We therefore have to disagree with appellant that he does not get a granular product. If appellant gets one by his *claimed* process, so will Samler because appellant's *claimed* steps are present in Samler. Forming granules from powder is the result of limited agglomeration. We therefore find independent claims 1 and 10 anticipated by Samler.

We need not consider Sandler in detail in view of the above holding and will mention only the principal difference from Samler. Sandler mixes the thermoplastic, plasticizer, etc., in a double conical tumbler rotated at 20-25 rpm, producing "rubbing contact over a substantial period of time between the particles of the mass moving relative to each other in their free-flowing state." He may blow hot air into the tumbler for heat and preheat the plasticizer which is intermittently sprayed into the powder, at such a rate as to maintain a "substantially dry, free-flowing particle condition." We agree with the board that Sandler also anticipates the independent claims, which justifies the section 102 rejection thereon. The solicitor considered

Samler the better reference and we likewise think it is on the ground that Samler probably generates more heat from friction due to the higher speed of the particles than Sandler would from his slower tumbling.

The remaining claims are all dependent and add limitations as to maximum temperature, temperature range, to use of filler, pigment, and specific vinyl thermoplastics, external heat, or partial vacuum. The board found them all to be anticipated except for claim 13, the one specifying that "a partial vacuum is maintained in the confined zone." It is only as to that claim that the board seems clearly to have based its affirmance of the rejection on section 103.

Considering now all the dependent claims with the exception of 13, appellant does not contend they are allowable for any different reasons than those advanced as to independent claims 1 and 10 with the exception of claims 7, 9, and 12 which he says are not anticipated for special reasons. These reasons are that claims 7 and 12 specify that "the thermoplastic is a vinyl emulsion polymerize" and claim 9 specifies that "the confined zone is heated in part by external heat." Disposing of claim 9 first, the "confined zone" in Samler includes, in our judgment, both his hopper and his curved pipe through which the contents of the hopper are continuously circulated from the bottom of the hopper to the top of it. The hopper has a heating jacket and is heated in part by external heat. Even if the confined zone is construed to be only the curved pipe, it gets heat from two "external" sources, the heating jackets on the hopper and a heater for the inert gas which is blown into it. We therefore find this limitation disclosed in Samler.

Claims 7 and 12 present a somewhat different problem. Claims 1 and 10, from which they depend, respectively, recite "A process for forming free-flowing granules from thermoplastic powder * * *." The dependent claims say the thermoplastic is "a vinyl emulsion polymerize." Appellant's specification says this is a type of plastic which is more difficult to handle by known blending methods and one for which his process is especially useful.¹

¹ The specification points out a difference between *suspension* polymerizes and *emulsion* polymerizes and says "a dry-blending process for preparing plasticized mixtures of suspension polymerizes has been introduced * * * [which] however, has not been applicable to the treatment of emulsion polymerizes

Appellant appears to be correct in contending that neither reference discloses vinyl *emulsion* polymerizes, even though polyvinyl thermoplastics are disclosed. For this reason, he says, claims limited thereto cannot be anticipated, i.e., rejected on section 102. The Patent Office argues that they are anticipated because Samler discloses his process as of value for treating heat-sensitive materials generally and as "applicable to * * * any thermoplastic material." Assuming without deciding that the limitations of claim 7 and 12 are really process limitations (no question having been raised on this ground), we do not think that the general disclosure of Samler can be considered anticipatory of a specific limitation not disclosed merely because the general will include the specific. We hold, therefore, that the section 102 rejection of claims 7 and 12 cannot be sustained, relegating us to the section 103 rejection.

We affirm the board in refusing claims 7, 12, and 13 as directed to obvious subject matter in view of the disclosures of Samler and Sandler. Clearly it would be obvious to use the blending process of either reference with any of appellant's thermoplastics, which are very closely related to those named in the references. As to using the partial vacuum of claim 13, which appellant's specification merely says enables a larger amount of plasticizer to be incorporated (60% as against 40%), Sandler teaches varying pressure, *inter alia*, in order to obtain optimum results. We think this would suggest partial vacuum to one of ordinary skill in the art.

[2] Appellant assigns error in the board's failure, on his request, to supply Rule 107 affidavits to support statements in its decision to the effect that heat would be generated by friction between particles in the reference processes and that those processes would produce a granular product or agglomerates. His theory is that the views of the board on these matters, with which he disagrees, are obviously based on facts within the personal knowledge of any employee of the Patent Office and contrary to the disclosure of the references. We see no error here. As to friction producing heat, the board was merely recognizing a fact known to anyone who has ever struck a match or slid down a rope. The mere failure of a reference to state the obvious is not cause for producing an affidavit. As for the production of agglomerates

* * * He says his invention is a method particularly for blending the latter.

to a sufficient degree to produce granular product from a powder, have already explained why we i that implicit in Samler. Some thi may be clear from disclosures though expressed therein in so many words.

The decision of the board is *affirm*

Court of Customs and Patent App
In re CORMANY, DIAL, AND PRAY
No. 8106 Decided Mar. 6, 19

PATENTS

Particular patents—Composition Cormany, Dial, and Pray, Stabi Compositions, claim 28 of applic allowed.—In re Cormany, Dial & (CCPA) 160 USPQ 801.

Appeal from Board of Appeal the Patent Office.

Application for patent of Charl Cormany, William R. Dial, and E O. Pray, Serial No. 712,693, filed 3, 1958; Patent Office Group 170. decision rejecting claim 28, appl appeal. Reversed.

MARK LEVIN and CHISHOLM & SPE both of Pittsburgh, Pa., and J & JONES, Washington, D. C. (L. SPENCER and RAYMOND S. HOLM, both of Pittsburgh, Pa. GEORGE R. JONES, Washington, of counsel) for appellants. JOSEPH SCHIMMEL (LEROY B. RA of counsel) for Commissioner of ents.

Before WORLEY, Chief Judge, and ALMOND, and BALDWIN, Ass Judges.

ALMOND, Judge.

This is an appeal from the d of the Patent Office Board of A affirming the final rejection of 28. of appellants' application e "Stabilized Compositions."¹ No has been allowed.

The invention relates to the sti against decomposition, of i chloroform (1,1,1-trichloroethan industrial solvent useful for liq vapor phase degreasing. In such methylchloroform evidences a tendency to decompose, parti when in contact with light meta

¹ Serial No. 712,693 filed February

to be correct in certain reference disclosures polymerizates, even thermoplastics are a reason, he says, reto cannot be asserted on section 102. argues that they are Samler discloses his for treating heat generally and as any thermoplastic without deciding of claim 7 and 12 limitations (no questioned on this ground), that the general disclosure can be considered specific limitation y because the general specific. We hold, section 102 rejection cannot be sustained, section 103 rejec-

board in refusing 18 as directed to tter in view of the mler and Sandler. obvious to use the of either reference int's thermoplastics, ely related to those ences. As to using of claim 18, which ation merely says mount of plasticizer (60% as against es varying pressure, to obtain optimum this would suggest ne of ordinary skill

signs error in the is request, to supply to support state- n to the effect that erated by friction in the reference t those processes ranular product or theory is that the on these matters, grees, are obviously within the personal employee of the Pat- ary to the disclosure e see no error here. cing heat, the board zing a fact known ever struck a match e. The mere failure state the obvious is cing an affidavit. on of agglomerates

vention is a method ding the latter.

to a sufficient degree to produce a granular product from a powder, we have already explained why we find that implicit in Samler. Some things may be clear from disclosures though not expressed therein in so many words.

The decision of the board is affirmed.

Court of Customs and Patent Appeals

In re CORMANY, DIAL, AND PRAY
No. 8106 Decided Mar. 6, 1969

PATENTS

Particular patents—Compositions

Cormany, Dial, and Pray, Stabilized Compositions, claim 28 of application allowed.—In re Cormany, Dial & Pray (CCPA) 160 USPQ 801.

Appeal from Board of Appeals of the Patent Office.

Application for patent of Charles L. Cormany, William R. Dial, and Blaine O. Pray, Serial No. 712,693, filed Feb. 3, 1958; Patent Office Group 170. From decision rejecting claim 28, applicants appeal. Reversed.

MARK LEVIN and CHISHOLM & SPENCER, both of Pittsburgh, Pa., and BEALE & JONES, Washington, D. C. (OSCAR L. SPENCER and RAYMOND S. CHISHOLM, both of Pittsburgh, Pa., and GEORGE R. JONES, Washington, D. C., of counsel) for appellants.

JOSEPH SCHIMMEL (LEROY B. RANDALL of counsel) for Commissioner of Patents.

Before WORLEY, Chief Judge, and RICH, ALMOND, and BALDWIN, Associate Judges.

ALMOND, Judge.

This is an appeal from the decision of the Patent Office Board of Appeals affirming the final rejection of claim 28 of appellants' application entitled "Stabilized Compositions."¹ No claim has been allowed.

The invention relates to the stabilization, against decomposition, of methylchloroform (1,1,1-trichloroethane), an industrial solvent useful for liquid and vapor phase degreasing. In such usage, methylchloroform evidences a strong tendency to decompose, particularly when in contact with light metals such

¹ Serial No. 712,693 filed February 3, 1958.

as aluminum, thus destroying its practical value as a solvent. Appellants discovered that this serious detriment to the use of methylchloroform is overcome by formulating the methylchloroform with minor amounts of acrylonitrile.

Claim 28 reads:

28. Methylchloroform containing from 0.05 to 5 per cent acrylonitrile by weight.

The claim was rejected by the examiner under 35 U.S.C. 103. The references are:

Missbach 2,043,260 June 9, 1936.
Petering et al. (Petering) 2,871,644
March 20, 1945

Klabunde 2,422,556 June 17, 1947.
Cole 2,802,886 August 18, 1957.
Bachtel 2,811,252 October 29, 1957.
Monroe et al. (Monroe) 2,906,783
September 29, 1959.

Burch et al. (Burch) 2,945,895 July 19, 1960.

Nex et al. (Nex) 2,959,556 November 8, 1960.
Skeeters (Great Britain) 765,522
January 9, 1957.

Missbach discloses stabilization of various chlorinated aliphatic hydrocarbons by incorporation of organic nitrile stabilizers such as methyl, ethyl and n-butyl cyanides.

Petering discloses the use of organic oxides, oximes, ethers and alcohols as stabilizers for chlorinated solvents such as trichloroethylene which are said to be subject to decomposition when in contact with aluminum.

Klabunde shows the use of vinyl cyanide (acrylonitrile) to prevent aluminum catalyzed decomposition of trichloroethylene.

Cole discloses that chlorinated hydrocarbon solvents, preferably trichloroethylene and perchloroethylene, may be stabilized by the use of 8-amino-2-methylbutan-2-ol. Methylchloroform is mentioned as a chlorohydrocarbon that may be stabilized in the same manner. Other stabilizers such as pyridine may be used with the primary stabilizer.

Bachtel discloses methylchloroform stabilized with dioxane and states that methylchloroform is more reactive with metals than other chlorohydrocarbons and in general the inhibitors effective with other chlorohydrocarbons are only moderately helpful with methylchloroform.

Monroe shows the stabilization of chlorinated aliphatic hydrocarbon solvents by the use of an azine, and specifically notes methylchloroform as

fees to any consumer who has loss as a result of a violation of the choice of the word "anyone" of the word "consumer" in 1), therefore, seems deliberate, and at the scope of the enjoinder remoter than that of the actual damage

court in *L.J.S. Co. v. Marks*, 480 F.2d 141 (S.D. Fla. 1979), while denying consumer damages under the Act, im- t a declaratory judgment and an a would have been available. Fur- in *United Feature Syndicate, Inc. v. Mold Co.*, 569 F.Supp. 1475 (1983) (J. Paine), the Court con- ce Act to protect owners of copy- m infringement.

ough the statute is generally di- traditional consumer transactions purpose is to protect the unsophisti- m being conned into unsound invest- ee *Black v. Department of Legal* 68 So. 2d 451 (1985), the extension itute's scope to others damaged by ade practices is not unique. Many ons have interpreted similar con- rotection statutes to encompass k violations that could cause confu- misunderstanding to the average

Therefore, it is:

DRED AND ADJUDGED that De- motion is hereby DENIED.

Industries v. J.C. Indus., 595 F.Supp. (Fla. 1983) the court construed Section 1 to exclude trademark cases from the Section excludes "a claim for damage to other than the property that is the subject consumer transaction." Nothing in that ower, excludes Plaintiff from seeking ory judgment and an injunction to pre- nued infringement of its trademark.

9 ALR 3d 449, 468 for cases where d that the use of tradenames constituted a deceptive trade practice statute or protection act.

Court of Appeals, Federal Circuit

Akzo N.V. v. U.S. International Trade Commission

No. 86-877

Decided December 22, 1986

PATENTS

1. Patentability/Validity — Anticipation — Prior art (§115.0703)

U.S. International Trade Commission did not use impermissible "ipsozimus verbis" test in finding that claimed process for making aramid fibers was not anticipated, but rather properly found that prior art did not disclose such process to one of ordinary skill in art and that prior art reference that called for use of sulfuric acid did not call for use of 98 percent concentration critical to success of claimed process, since "concentrated sulfuric acid" is not inherently 98 percent sulfuric acid to one skilled in art.

2. U.S. International Trade Commission — In general (§115.01)

International Trade Commission's administrative protective order which permitted access to confidential business information produced during discovery phase of investigation, by both parties' outside counsel, but not by management personnel or in-house counsel of either company was proper, since order did unilaterally immunize purportedly confidential documents from scrutiny of party challenging order, since order provided mechanism by which either party was free to object to designation of information as confidential, and since party challenging order failed to prove need for access to such information, nor harm to it from nondisclosure.

3. U.S. International Trade Commission — Burden of proof (§115.05)

International Trade Commission did not err in determining that unlawful importation of infringing aramid fibers violated Tariff Act's Section 337, 19 USC 1337, based upon its finding, supported by substantial evidence, that such importation will have tendency to injure domestic industry, despite evidence that domestic industry's profits from sale of fibers will increase notwithstanding such entry into market, since issue under Section 337 is not whether domestic industry profits will increase beyond current levels but whether importer's presence in market will substantially injure domestic industry's business during remaining life of patent.

4. U.S. International Trade Commission — Jurisdiction (§115.03)

International Trade Commission proceeding under Tariff Act's Section 337, 19 USC 1337, is not "inherently judicial" proceeding that must be adjudicated only by Constitution's Article III courts, even though private rights may be affected by Section 337 proceedings, since main thrust of Section 337 is to protect public interest from unfair trade practices in international commerce, and since Section 337 represents valid delegation of broad congressional power to achieve such purpose.

Appeal from U.S. International Trade Commission.

U.S. International Trade Commission investigation on behalf of E.I. du Pont de Nemours and Co., for exclusion of certain aramid fibers covered by U.S. patent, in which Akzo N.V., Enka B.V., Aramide Maatschappij v.o.f., and Akzona Incorporated, were designated as respondents. From exclusion order prohibiting importation, respondents appeal. Affirmed.

Denis McInerney, and Cahill Gordon & Reindel, both of New York, N.Y., C. Frederick Leydig, and Leydig, Voit & Mayer Ltd., both of Chicago, Ill., and Tom M. Schaumberg, Cecilia H. Gonzalez, and Plaia & Schaumberg, Chartered, all of Washington, D.C. (David R. Hyde, Laurence T. Sorkin, George Wailand, P. Kevin Castel, Charles S. Oslakovic, John Kilyk, Jr., Norval B. Galloway, and Robert H. Falk, and Hubbard, Thurman, Turner & Tucker, both of Dallas, Texas, on the brief), for appellants.

Catherine Field, Office of the General Counsel, U.S. International Trade Commission (Michael P. Mabile, assistant general counsel, on the brief), for appellee.

Daniel M. Gribbon, and Covington & Burling, both of Washington, D.C., Joseph M. Fitzpatrick, and Fitzpatrick, Cella, Harper & Scinto, both of New York, N.Y. (Harris Weinstein, James R. Atwood, Eugene D. Gulland, Dwight C. Smith, III, and Stephen H. Marcus, and John A. O'Brien, Henry J. Renk, Charles P. Baker, Laura A. Bauer, and Bruce C. Haas, on the brief), for intervenor-appellee E.I. du Pont de Nemours.

Before Markey, Chief Judge, and Davis and Nies, Circuit Judges.

Davis, Circuit Judge.

This is an appeal by Akzo, N.V., Enka B.V., Aramide Maatschappij v.o.f. and Akzo Inc. (appellants or Akzo) from an exclusion order by the United States International Trade Commission (Commission or trial tribunal) pursuant to §§337 and 337a of the Tariff Act of 1930, 19 U.S.C. §§1337, 1337a (1982), prohibiting the importation into the United States of aramid fibers manufactured by Akzo in the Netherlands. We affirm.

I. *Background; Issues; Scope of Review*

A. Background. On April 18, 1984, E.I. du Pont de Nemours and Company (appellee or Du Pont) filed a complaint with the Commission under §337 of the Tariff Act of 1930 (19 U.S.C. §1337).¹ The complaint alleged that Akzo had engaged in unfair methods of competition and unfair acts including the importation, sale and marketing in the United States of certain aramid fibers,² produced in the Netherlands by a process purportedly covered by the claims of Du Pont's U.S. Letters Patent No. 3,767,756 (the Blades or '756 patent). In addition, the complaint charged Akzo with attempting both to exploit applications of aramid fibers and to penetrate markets for aramid fibers created by Du Pont. Finally, the complaint alleged that the effect or tendency of the unfair methods of competition and unfair acts was to destroy or substantially injure an industry, efficiently and economically operated, in the United States.

After evaluating Du Pont's complaint, the Commission instituted an investigation pursuant to §337(b), 19 U.S.C. §1337(b), and an administrative law judge (ALJ) was assigned to preside over the investigation.

The major substantive question before the ALJ (and now before us) is the validity and enforceability of Du Pont's Blades patent. Those issues, and the related facts and circumstances, are set forth and discussed in Part II, *infra*. The major procedural issue is whether Akzo was denied due process because Du Pont's confidential documents were not disclosed to appellants' management. This problem (together with an alleged violation of treaty rights) is considered in Part III, *infra*. The other issues presented to us are dealt with in Part IV, *infra*.

to us are dealt with in Part IV, *infra*.
Following 14 days of hearing the ALJ issued an initial determination holding that there was a violation of §337(a) of the Tariff Act of 1930 in the unlawful importation or sale of certain aramid fibers produced overseas by means of a process that if practiced in the United States would infringe the Blades '756 patent, and that importation has the tendency to injure substantially an efficiently and economically operated industry in the United States.

Akzo filed a petition for review of the ALJ's initial determination on June 3, 1985. On July 15, 1985, the Commission decided to review only those portions of the initial determination pertaining to anticipation and obviousness of the Blades '756 patent under 335 U.S.C. §§102 and 103. Ultimately, the Commission affirmed the ALJ's findings and conclusions on anticipation and obviousness and determined that appellants had failed to prove the Blades '756 patent invalid. Having decided not to review the remainder of the initial determination, the Commission concluded that there was a violation of §337. Accordingly, on November 25, 1985, the Commission, after further consideration, entered an exclusion order limited to certain forms of aramid fibers produced by Akzo. The Commission's order became final on January 25, 1986 when the President declined to overrule it pursuant to §337(g).

B. Issues. On this appeal, Akzo raises a number of issues for us to resolve:

(1) whether the Commission's finding that claim 13 of the '756 patent was "not invalid" and "not unenforceable" is supported by substantial evidence.'

¹ 19 U.S.C. §1337 (1976) provides in pertinent part:

Unfair practices in import trade

(a) Unfair methods of competition declared unlawful

Unfair methods of competition and unfair acts in the importation of articles into the United States, or in their sale by the owner, importer, consignee, or agent of either, the effect or tendency of which is to destroy or substantially injure an industry, efficiently and economically operated, in the United States, or to prevent the establishment of such an industry, or to restrain or monopolize trade and commerce in the United States, are declared unlawful, and when found by the Commission to exist shall be dealt with, in addition to any other provisions of law, as provided in this section.

³ As indicated in Part II, *infra*, aramid fibers are the strongest commercial synthetic fibers known to man — about five times stronger than steel on an equal weight basis.

³ Akzo presents no contention that, if claim 13 of the '756 patent is valid and enforceable, Akzo would not infringe if it used its same process in this country.

- (2) whether Akzo's due process rights were violated in the proceeding;
- (3) whether the Commission Article III tribunal, is prohibited from adjudicating and enforceability of patent
- (4) whether the Commission Akzo's sales of aramid fiber States would have a tendency to substantially injure" a nominally and efficiently operated by substantial evidence
- (5) whether the Commission that Du Pont's value-in-use violates the antitrust laws supported by substantial evidence
- (6) whether it is a defense complaint that Du Pont's patent included in a polymers patented by Akzo.

patented by AKZO.

C. *Scope of review.* This c scope of review in cases appealed to the Commission in *Beloit Corp.* (Order), 742 F.2d 1421, 1984), cert. denied, 105 S. Ed. 2d 721 (1985). There the court "does not sit to review a mission has not decided." 74-223 USPQ at 194. *Beloit* is from this case because there specifically adopted only a presiding official's initial decision in *American Hospital Supply Corp. v. Venol Laboratories, Inc.*, 74-223 USPQ 577, 580 n.13 (1984). In contrast, in the current case the Commission merely determined no remainder of the initial decision to conduct its own §§102 and 103 review. The Commission neither rejected the initial determination nor did it was taking no position on it. Although the Commission review to patent validity under 103, the fact that it affirmed the ALJ that there as a makes reviewable those claims necessary for the Commission determined (as it did) that that violation. *Accord Warner Electric Co. v. U.S. International Trade Commission*, 74 F.2d 562, 229 USPQ 126 (1984). This includes not only the issues of anticipation and obviousness, also whether there was inequitable conduct before the Patent Office and decided by the Commission.

19 C.F.R. §210.53(h)(198
“[a]n initial determination ...
determination of the Commissi

evaluating Du Pont's complaint, the Commission instituted an investigation pursuant to 337(b), 19 U.S.C. §1337(b), and an administrative law judge (ALJ) was assigned to preside over the investigation.

A major substantive question before the Commission (now before us) is the validity and enforceability of Du Pont's Blades patent. The issues, and the related facts and circumstances, are set forth and discussed in *infra*. The major procedural issue is

Akzo was denied due process because Du Pont's confidential documents were disclosed to appellants' management. This problem (together with an allegation of treaty rights) is considered in Part III, *infra*. The other issues presented are dealt with in Part IV, *infra*.

Following 14 days of hearing the ALJ issued an initial determination holding that a violation of §337(a) of the Tariff Act of 1930 in the unlawful importation of certain aramid fibers produced overseas means of a process that if practiced in the United States would infringe the '756 patent, and that importation has the tendency to injure substantially an efficient and economically operated industry in the United States.

Appellants filed a petition for review of the initial determination on June 3, 1985. On July 15, 1985, the Commission decided to review only those portions of the initial determination pertaining to anticipation and obviousness of the Blades '756 patent under 35 U.S.C. §§102 and 103. Ultimately, the Commission affirmed the ALJ's findings of non-infringement on anticipation and obviousness, and determined that appellants had failed to prove the Blades '756 patent invalid. The Commission decided not to review the remainder of the initial determination, the Commission concluded that there was a violation of §337. Accordingly, on November 25, 1985, the Commission, after further consideration, issued an exclusion order limited to certain aramid fibers produced by Akzo. The Commission's order became final on January 25, 1986 when the President failed to overrule it pursuant to §337(g).

On this appeal, Akzo raises a number of issues for us to resolve:

Whether the Commission's finding that claim 13 of the '756 patent was "not valid" and "not unenforceable" is supported by substantial evidence.¹

Appellants present no contention that, if claim 13 of the '756 patent is valid and enforceable, Akzo would infringe if it used its same process in this

(2) whether Akzo's due process and treaty rights were violated in the Commission proceeding;

(3) whether the Commission, as a non-Article III tribunal, is constitutionally prohibited from adjudicating the validity and enforceability of patents;

(4) whether the Commission's finding that Akzo's sales of aramid fibers in the United States would have a tendency to "destroy or substantially injure" an industry economically and efficiently operated is supported by substantial evidence;

(5) whether the Commission's conclusion that Du Pont's value-in-use pricing did not violate the antitrust laws is correct and supported by substantial evidence; and

(6) whether it is a defense to Du Pont's complaint that Du Pont employed a solvent included in a polymerization process patented by Akzo.

C. *Scope of review.* This court defined our scope of review in cases appealed from the Commission in *Beloit Corp. v. Valmet OY*, (Order), 742 F.2d 1421, 223 USPQ 193 (1984), cert. denied, 105 S. Ct. 2706, 86 L. Ed. 2d 721 (1985). There we held that the court "does not sit to review what the Commission has not decided." 742 F.2d at 1423, 223 USPQ at 194. *Beloit* is distinguishable from this case because there the Commission specifically adopted only a portion of the presiding official's initial decision. See, e.g., *American Hospital Supply Corp. v. Travenol Laboratories, Inc.*, 745 F.2d 1, 5 n.13, 223 USPQ 577, 580 n.13 (Fed. Cir. 1984). In contrast, in the current case, the Commission merely determined not to review the remainder of the initial decision, choosing to conduct its own §§102 and 103 analysis. The Commission neither rejected any part of the initial determination nor did it say that it was taking no position on any part of it. Although the Commission limited its own review to patent validity under §§102 and 103, the fact that it affirmed the conclusion of the ALJ that there was a §337 violation makes reviewable those conclusions of the ALJ necessary for the Commission to have determined (as it did) that there was a §337 violation. *Accord Warner Brothers, Inc. v. U.S. International Trade Commission*, 787 F.2d 562, 229 USPQ 126 (Fed. Cir. 1986). This includes not only the §§102 and 103 issues of anticipation and obviousness, but also whether there was inequitable conduct before the Patent Office and the other issues decided by the Commission and the ALJ.²

¹ 19 C.F.R. §210.53(h)(1986) provides that "[a]n initial determination . . . shall become the determination of the Commission . . . unless the

II. Validity and Enforceability of the Blades Patent

A. *The Invention.*³ The Blades '756 patent, "Dry-Jet Wet Spinning Process," was issued on October 23, 1973 to Dr. Herbert Blades and immediately assigned to Du Pont. The patent describes a method that produces a high strength synthetic polyamide fiber which Du Pont has marketed under the trade name Kevlar. This fiber has an extraordinary as-spun strength, five times stronger pound for pound than steel, as well as a modulus (stretch resistance) equal to glass, eight times as high as industrial grade polyester, and twenty-five times as high as industrial nylon. Kevlar is also much more heat resistant than industrial-grade nylon or polyester. These extraordinary physical properties, as well as Kevlar's light weight and rustproof character, have enabled Du Pont to market it for use in a variety of applications including, but not limited to, roping, spacecraft and airplane parts, bullet resistant clothing and armor, tires, and boat hulls. Depending upon its use, Kevlar has been used as a substitute for steel, aluminum, asbestos, nylon, rayon, polyester, cotton, or cotton fiber. Kevlar is available as either a continuous rope or filament, or alternatively as a staple or pulp. Staple consists of short filaments which can be spun into yarn. Pulp is ground fiber most often used as an asbestos substitute.

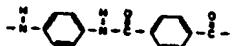
The procedure by which the synthetic fiber is manufactured involves dry spinning polyamides from coagulation solutions called dopes. In dry spinning, a specialized filter called a spinneret is placed a short distance from a bath of spinning dope that is extruded through a layer of gas and into an aqueous

Commission . . . shall have ordered review of the initial determination or certain issues therein . . ." In accepting the necessary conclusions of the ALJ we do not hold that the Commission must have concurred with each and every individual factual finding of the ALJ to support its conclusion.

Our recitation of the facts follows the ALJ's and the Commission's findings which are supported by at least substantial evidence. See *Surface Technology, Inc. v. U.S. International Trade Commission*, 801 F.2d 1336, 1340, 231 USPQ 192, 195 (Fed. Cir. 1986).

³ Polyamides are polymers containing amide linkages. Aromatic polymers are polyamides where the radicals linking the amide linkages constitute aromatic radicals. The polymer described in claim 13 of the Blades '756 patent is a wholly aromatic para-positioned polyamide.

coagulation bath.' The dope used in the Blades '756 patent consists of para-positioned aromatic polyamides dissolved in highly concentrated sulfuric acid and heated to around 100°C. The polyamide used is a high molecular weight poly(p-phenylene terephthalamide) (PPD-T).



The high molecular weight of the polyamide results in a high inherent viscosity¹ of approximately 4.4% when 20% PPD-T by weight is dissolved in approximately 100% sulfuric acid.

In 1969 Dr. Blades, one of Du Pont's research scientists, began to develop and conduct experiments aimed at producing a high-strength synthetic fiber. Blades exclusively employed a wet-spinning method in his early work, using PPD-T as well as other polymers. This early work had minimal success. Although the dry-spinning method was known by Du Pont scientists, a 1966 report indicated that the low solubility of PPD-T precluded use of the dry-spinning technique. In 1969, Du Pont's Dr. Peter Boettcher suggested to Blades that dry spinning might improve the end-results by influencing coagulation. Dr. Boettcher had learned about dry spinning from a Monsanto Morgan patent (Morgan '645 patent).

Blades' early experimentation with the dry-spinning process did not yield fiber with an increased tenacity despite the fact that dry spinning was known to improve fiber tenacity using other dopes. Blades' initial conclusion was that dry spinning would be unsuccessful with PPD-T. Nevertheless, he continued experimenting with the dry-spinning process, and, at his supervisor's suggestion, began using sulfuric acid as a solvent. Blades also redesigned and built a mixing device because of some difficulties he encountered mixing PPD-T with the sulfuric acid. Sulfuric acid was not an evident candidate as a solvent because it was known to react with the polymer and become degraded

Dry spinning can be contrasted with wet spinning where the spinneret is placed directly into the spinning dope. Wet spinning is the process used to make a number of synthetic fibers including rayon and nylon.

Inherent viscosity (η_{inh}) is a measure of viscosity used in polymer chemistry.

measured at the same temperature.

at high temperatures. Blades discovered, however, that he could produce an improved fiber using 10.2% polyamide in about 100% sulfuric acid. Under this system he found that there was no difference in tensile strength of the fiber using a wet-spun or dry-spun method. PPD-T was a somewhat unusual choice of polymer for this work because of its characteristic rigidity caused by the placement of para-oriented aromatic rings in the chain. The para-positioning of the aromatic rings makes the polyamide much less soluble than analogous meta-positioned rings. But the fact is that, while meta-positioned polymers generally form only isotropic solutions, para-positioned polymers of Blades' invention form anisotropic solutions⁹ at high concentrations.

In subsequent trials, Blades increased the concentration of PPD-T and obtained a significantly improved fiber, especially using the dry-spinning method. When the system was operated at room temperature, however, he found that undissolved polyamide clogged up the holes of the spinneret. He therefore heated the dope at these higher concentrations to dissolve all the polyamide and keep the system above the melting point. To his surprise, Blades discovered that there was little or no degradation of the polyamide at high temperatures. He explained this unexpected absence of degradation by theorizing that, when the system contains high concentrations of PPD-T, the sulfuric acid binds to the polymer and chemically deactivates it.

After numerous trials, Blades found that an optional fiber could be produced using PPD-T of 4.4 inherent viscosity at a 20% concentration in approximately 100% sulfuric acid. The dope was then heated to 95°C and dry spinning was then carried out at about 100°C. The resultant fiber had a tenacity of approximately two times that of previous experimental fibers.

In April 1971, Blades filed an application with the PTO claiming the method of making these aramid fibers. the initial application and two subsequent applications were rejected in large part on the basis of anticipation by the Morgan '645 and the Kwolek '542 patents which Du Pont had brought to the attention of the examiner. Initially the

* An anisotropic solution exhibits optical birefringence (i.e., the liquid crystalline solution refracts light in two directions). This characteristic imparts a high degree of orientation to the spun fibers yielding a stiffer and stronger end product without requiring post-coagulation drawing as is required in other man-made fibers such as nylon and rayon.

1 USPQ2d

Akzo N.

examiner also rejected the application 35 U.S.C. §103. Blades, however, overcame the examiner's objection on May 2, 1973, the PTO gave allowance of the Blades '756 patent, assigned the patent rights to D

B. Validity. Claim 13, the claim, is the only claim involved in appeal.¹⁰ Akzo says that that claim is under 35 U.S.C. §§ 102 and specifically, Akzo argues that the Commission misconstrued the legal stipulation and therefore errored in finding that the Blades '756 patent was valid. In addition, appellants argue that the Commission failed properly to consider prior art in determining obviousness. Of course, it goes without saying that the Blades '756 patent enjoys a presumption of validity under 35 U.S.C. § 2.

¹⁰ Claim 13 reads as follows:
A method comprising extruding
from an orifice through a layer
an aqueous bath at a tempe
50°C said dope comprising a
solvent of sulfuric acid of at le
tration at a concentration of at
said polyamide per 100 ml.
polyamide having an inheren
least 3.0 and being
terephthalamide).

"An *ipsissimis verbis*" test or terminology in the prior art is anticipation.

¹² The Commission made special examination of the skill of the art. It concluded that the skill of the art was high — that of a doctorate in chemistry.

temperatures. Blades discovered, that he could produce an improved 10.2% polyamide in about 100% acid. Under this system he found there was no difference in tensile of the fiber using a wet-spun or dry-spun. PPD-T was a somewhat unusual polymer for this work because of characteristic rigidity caused by the presence of para-oriented aromatic rings in it. The para-positioning of the aromatics makes the polyamide much less than analogous meta-positioned. The fact is that, while meta-positioned polymers generally form only isotropics, para-positioned polymers of invention form anisotropic solution high concentrations.

Subsequent trials, Blades increased the concentration of PPD-T and obtained a significantly improved fiber, especially using a spinning method. When the system was heated at room temperature, however, that undissolved polyamide clogged the orifices of the spinneret. He therefore heated the dope at these higher concentrations to dissolve all the polyamide and keep it above the melting point. To his

surprise, Blades discovered that there was no degradation of the polyamide at these temperatures. He explained this unexpected absence of degradation by theorizing that the system contains high concentrations of PPD-T, the sulfuric acid binds to the fiber and chemically deactivates it. Numerous trials, Blades found that a fiber could be produced using a 4.4 inherent viscosity at a 20% concentration in approximately 100% sulfuric acid. The dope was then heated to 95°C and spinning was then carried out at 0°C. The resultant fiber had a tensile strength approximately two times that of experimental fibers.

In 1971, Blades filed an application with the PTO claiming the method of making aramid fibers. The initial application and two subsequent applications were based on the basis of anticipation of the Morgan '645 and the Kwolek patents which Du Pont had brought to the attention of the examiner. Initially the

anisotropic solution exhibits optical birefringence, the liquid crystalline solution reappearing in two directions. This characteristic of high degree of orientation to the spinning of a stiffer and stronger end product, requiring post-coagulation drawing as is the case with other man-made fibers such as nylon

examiner also rejected the application under 35 U.S.C. §103. Blades, however, was able to overcome the examiner's objections, and on May 2, 1973, the PTO gave notice of allowance of the Blades '756 patent. Blades assigned the patent rights to Du Pont.

B. Validity. Claim 13, the narrowest claim, is the only claim involved on this appeal.¹⁰ Akzo says that that claim is invalid under 35 U.S.C. §§ 102 and 103. More specifically, Akzo argues that the Commission misconstrued the legal standard of anticipation and therefore erroneously held that the Blades '756 patent was not anticipated. In addition, appellants argue that the Commission failed properly to evaluate the prior art in determining obviousness *vel non*. Of course, it goes without elaboration that the Blades '756 patent enjoys a presumption of validity under 35 U.S.C. §282.

[1] As we have said, Akzo challenges the Commission's use of §102, claiming that that tribunal misinterpreted the legal standard of anticipation. Under 35 U.S.C. § 102, anticipation requires that each and every element of the claimed invention be disclosed in a prior art reference. *W.L. Gore & Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540, 1554, 220 USPQ 303, 313 (Fed. Cir. 1983), *cert. denied*, 469 U.S. 851 (1984). In addition, the prior art reference must be enabling, thus placing the allegedly disclosed matter in the possession of the public. *In re Brown*, 329 F.2d 1006, 1011, 141 USPQ 245, 249 (CCPA 1964). Akzo asserts, however, that the Commission wrongly used an "*ipsissimis verbis* test" in reaching its conclusion that the Blades '756 patent was not anticipated by the Morgan '645 disclosure.¹¹ We do not read the Commission's opinion as requiring such an "*ipsissimis verbis* test." Rather, we understand that opinion as simply finding that the prior art reference did not disclose, to one of ordinary skill in the art,¹² the

process for making the aramid fibers described in claim 13. The Commission noted that while the Morgan '645 patent called for the use of sulfuric acid, it did not call for the use of at least 98% concentrated sulfuric acid which was critical for the success of the Blades process. The Commission also concurred with the ALJ and found that concentrated sulfuric acid is not inherently 98% sulfuric acid to one skilled in the art.

Because we determine that the Commission did not use an incorrect legal standard under §102, we are bound to accept its and the ALJ's factual findings if supported by substantial evidence. 5 U.S.C. § 706 (1982). As appellants themselves point out, anticipation under §102 is a factual determination. *Lindemann Maschinenfabrik GMBH v. American Hoist & Derrick Co.*, 730 F.2d 1452, 1458, 221 USPQ 481, 485 (Fed. Cir. 1984). We must conclude that there is substantial evidence in the record supporting the Commission's conclusion that claim 13 of the Blades '756 patent was not anticipated by the prior art. As the Supreme Court noted in *Universal Camera v. NLRB*, 350 U.S. 474, 488 (1951), the substantial evidence standard does not allow a court to conduct a *de novo* investigation of the evidence on the record before it and reach an independent conclusion; rather, the court's review is limited to deciding whether there is sufficient evidence in the record considered as a whole to support the agency's findings. The mere fact that a reasonable person might reach some other conclusion is insufficient for this court to overturn the agency's conclusion. See *SSIH Equipment S.A. v. U.S. International Trade Commission*, 718 F.2d 365, 381, 218 USPQ 678, 691 (Fed. Cir. 1983) (additional views of Judge Nies).

The ALJ concluded, after extensive analysis, that the claimed invention of the Blades '756 patent was not anticipated by prior art, including the Morgan '645 patent. He noted that, while the Morgan '645 patent teaches the use of an airgap, the use of airgap in and of itself does not guarantee an improved fiber. This was obvious from Blades' early work. The ALJ also found that sulfuric acid in any concentration was not disclosed as a solvent in the Morgan '645 patent; or did that patent disclose PPD-T in its optically anisotropic state. Moreover, the ALJ found that the Morgan '645 patent was not an enabling disclosure with regard to the claimed spinning dope. Neither the 18% concentration of PPD-T nor the heating of the dope to achieve this concentration was disclosed in the Morgan '645 patent. The ALJ also rejected appellants' arguments that the

¹⁰ Claim 13 reads as follows:

A method comprising extruding a spinning dope from an orifice through a layer of gas and into an aqueous bath at a temperature of under 50°C said dope comprising a polyamide and a solvent of sulfuric acid of at least 98% concentration at a concentration of at least 40 grams of said polyamide per 100 ml. of solvent, said polyamide having an inherent viscosity of at least 3.0 and being poly(p-phenylene terephthalamide).

¹¹ An "*ipsissimis verbis*" test requires the same terminology in the prior art in order to find anticipation.

¹² The Commission made specific findings on the skill of the art. It concluded that the skill in the art was high — that of a doctorate or post-doctorate in chemistry.

Blades process was anticipated by the Hill and Smith patents which were referenced in the Morgan '645 patent. This would have required Blades randomly to pick and choose among a number of different polyamides, a plurality of solvents, and a range of inherent viscosities. The ALJ rejected such "random picking and choosing" of prior art, relying on *In re Arkley*, 455 F.2d 586, 587, 172 USPQ 524, 526 (CCPA 1972), and concluded in effect that the anticipatory reference must disclose in the prior art a thing substantially identical with the claimed invention. In a somewhat more limited consideration — restricted to the concentration of sulfuric acid in the Blades patent — the Commission itself reached the same result.

Accordingly, we hold that there is substantial evidence in the record as a whole to sustain the Commission's (including the ALJ's) findings that the Blades process was not anticipated by any prior art.¹³

Appellants say, as an alternative to their §102 argument, that the trial tribunal erred when it failed to find that the Blades '756 patent would have been obvious under 35 U.S.C. §103 in view of the Morgan '645 and Kwolek '542 patents. It is now established that obviousness is a question of law based on factual inquiries which include:

- (1) the scope and content of the prior art;
- (2) the difference between prior art and the claims at stake;
- (3) the level of ordinary skill in the art; and
- (4) objective evidence of nonobviousness (secondary factors).

Such objective indications as commercial success and long-felt but unresolved needs, failure of others, copying, and unexpected results are relevant facts relating to the issue of validity. See, e.g., *In re DeBlauwe*, 736 F.2d 699, 222 USPQ 191 (Fed. Cir. 1984) (obviousness a question of law to be determined on the facts). Since obviousness is a question of law, we are not bound by the Commission's ultimate determination on the matter of §103 obviousness. See *Corning*

Glass Works v. U.S. International Trade Commission, 799 F.2d 1559, 1565 & n.5, 230 USPQ 822, 826 & n.5 (Fed. Cir. 1986).

In the proceedings before the Commission, Du Pont premised its defense of nonobviousness on the basis that the prior art — mainly that the Morgan '645 patent and the Kwolek '542 patent — actually led away rather than toward the Blades process. The Commission found Du Pont's expert witness' testimony to be compelling. That witness, Dr. Uhlmann, explained why the Morgan '645 patent, when considered with other prior art references, including the Kwolek '542, Bair '941, and Cipriani '793 patents, would not have rendered the invention of Blades '756 patent obvious. The Kwolek '542 patent calls for conventional wet or dry spinning and calls for concentrations of PPD-T far lower than required by the Blades process. The Bair '941 patent does not disclose heating sulfuric acid with PPD-T to achieve an anisotropic solution. While the Morgan '745 patent discloses air-gap spinning, its emphasis is on meta-oriented polymers. Based on these differences, Dr. Uhlmann concluded that one skilled in the art would not combine them or be led to the Blades invention.

As the ALJ recognized, prior art references before the tribunal must be read as a whole and consideration must be given where the references diverge and teach away from the claimed invention. *W.L. Gore & Associates, Inc. v. Garlock*, 721 F.2d 1540, 1550, 220 USPQ 303, 311 (Fed. Cir. 1983), cert. denied, 469 U.S. 851 (1984). Moreover, appellants cannot pick and choose among individual parts of assorted prior art references "as a mosaic to recreate a facsimile of the claimed invention." 721 F.2d at 1552, 220 USPQ at 312. In this case, the ALJ found that Akzo's expert witnesses could not show how the prior art patents could be brought together to render the Blades '756 invention obvious without reconstructing the teachings of those patents assisted by hindsight.

The secondary considerations also compelled the Commission to make a finding of nonobviousness. The commercial success of Du Pont's Kevlar patent has been enormous and its range of uses substantial. Du Pont is still developing commercial applications for Kevlar, having spent significant amounts of money in developing both new uses and new markets for the product. Commercial success is, of course, a strong factor favoring non-obviousness. *Simmons Fastener Corp. v. Illinois Tool Works, Inc.*, 739 F.2d 1573, 1575-76, 222 USPQ 774, 777, (Fed. Cir. 1984), cert. denied, 471 U.S. 1065 (1985). Moreover, as the ALJ noted, Blades solved a problem that Du Pont research scientists had

¹³ Appellants cite this court's opinion in *Titanium Metals Corp. v. Banner*, 778 F.2d 775, 782, 227 USPQ 773, 778-79 (Fed. Cir. 1985), as supporting their contention that the Blades '756 patent was anticipated by the prior art. *Titanium Metals* is easily distinguishable from this case. There, a single reference disclosed a range of alloys including that claimed by appellant. In this case, the Commission found that neither the Morgan '645 patent nor any other prior art reference disclosed the Blades '756 process.

been tackling for years. The Blades process represents a solution to a long-standing problem in the field immediately recognized that that process was an advancement in polymer spinning. Indeed, as brought out in even one of Akzo's scientific reports, it clearly expressed concern for developing PPD-T and amazement at the success of the Blades '756 process.

We agree, therefore, with the Commission's determination that the patent is not invalid for anticipatoriness.

C. *Alleged inequitable conduct*

Patent and Trademark Office applicants urge that Du Pont misled the examiner in two respects: first, by submitting an affidavit to overcome the examiner's obviousness objections; and, second, that Du Pont's argument that the Morgan '745 and the Kwolek '542 patent did not combine to teach the Blades process.

In *J.P. Stevens & Co. v. Lexan Products, Inc.*, 223 USPQ 108 (1984), cert. denied, 106 S. Ct. 220 (1984), this court articulated a two-pronged test for establishing inequitable conduct. To render a patent unenforceable, the proponent of the inequitable conduct must establish by clear and convincing evidence that there was a material omission or misrepresentation of information or that there was a material omission or misrepresentation of material facts. See also *Co. v. E.I. du Pont de Nemours & Co.*, 721 F.2d 1569, 1577-78, 224 USPQ 2d 1065 (Fed. Cir. 1984).

Our major standard for whether a reasonable examiner would consider the omission or misrepresentation important in deciding whether to grant a patent is that the omission or misrepresentation, when considered together, the more important omission or misrepresentation, that must be shown to reach the level of inequitable conduct. *American Cyanamid Co. v. Sowa & Sons*, 71363, 220 USPQ 763, 773 (Fed. Cir. 1984), cert. denied, 469 U.S. 821, 220 USPQ 2d 1065 (1984).

We uphold the Commission's conclusion that Du Pont's affidavits before the examiner did not establish material misrepresentation. The Commission's finding that the examiner had been misled by the affidavits is supported by the record.

¹⁴ This standard is identical to that of materiality. 37 C.F.R. §1.56.

Works v. U.S. International Trade Commission, 799 F.2d 1559, 1565 & n.5, 222 USPQ 822, 826 & n.5 (Fed. Cir. 1986). In the proceedings before the Commission, it premised its defense of nonobviousness on the basis that the prior art — mainly the Morgan '645 patent and the Kwolek intent — actually led away rather than toward the Blades process. The Commission accepted Du Pont's expert witness' testimony to this spelling. That witness, Dr. Uhlmann, stated why the Morgan '645 patent, considered with other prior art references including the Kwolek '542, Bair '941, and Iriani '793 patents, would not have led the invention of Blades '756 patent. The Kwolek '542 patent calls for optional wet or dry spinning and calls for concentrations of PPD-T far lower than used by the Blades process. The Bair patent does not disclose heating sulfuric acid with PPD-T to achieve an anisotropic fiber. While the Morgan '745 patent discloses air-gap spinning, its emphasis is on oriented polymers. Based on these differences, Dr. Uhlmann concluded that one in the art would not combine them or to the Blades invention.

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secondary considerations also compelled the Commission to make a finding of nonobviousness. The commercial success of Kevlar's Kevlar patent has been enormous and the range of uses substantial. Du Pont is developing commercial applications for Kevlar, having spent significant amounts of time in developing both new uses and new markets for the product. Commercial success, of course, a strong factor favoring nonobviousness. *Simmons Fastener Corp. v. Tool Works, Inc.*, 739 F.2d 1573, 222 USPQ 774, 777, (Fed. Cir. 1984), cert. denied, 471 U.S. 1065 (1985). Moreover, as the ALJ noted, Blades solved a problem that Du Pont research scientists had

been tackling for years. The Blades process represents a solution to a long-felt need and practitioners in the field immediately recognized that that process was a remarkable advancement in polymer spinning technology. Indeed, as brought out in this appeal, even one of Akzo's scientific reports repeatedly expressed concern for degradation of PPD-T and amazement at the disclosure of the Blades '756 process.

We agree, therefore, with the Commission's determination that the Blades '756 patent is not invalid for anticipation or obviousness.

C. *Alleged inequitable conduct before the Patent and Trademark Office (PTO)*. Appellants urge that Du Pont misled the patent examiner in two respects: first, that Du Pont submitted an affidavit to overcome the examiner's obviousness objections that failed to compare the Blades process with the closest prior art; and, second, that Du Pont persistently argued that the Morgan '645 patent and the Kwolek '542 patent did not anticipate the Blades patent.

In *J.P. Stevens & Co. v. Lex Tex Ltd.*, 747 F.2d 1553, 223 USPQ 1089 (Fed. Cir. 1984), cert. denied, 106 S. Ct. 73 (1985), this court articulated a two-prong test for establishing inequitable conduct before the PTO. To render a patent unenforceable, the proponent of the inequitable conduct must first establish by clear and convincing evidence that there was a material misrepresentation or omission of information, and then establish a threshold level of intent on the part of the applicant. See also *Atlas Powder Co. v. E.I. du Pont de Nemours & Co.*, 750 F.2d 1569, 1577-78, 224 USPQ 409, 414-15 (Fed. Cir. 1984).

Our major standard for materiality is whether a reasonable examiner would consider the omission or misrepresentation important in deciding whether to issue the patent.¹⁴ Materiality and intent must also be considered together: the more material the omission or misrepresentation, the less intent that must be shown to reach a conclusion of inequitable conduct. *American Hoist & Derrick Co. v. Sowa & Sons*, 725 F.2d 1350, 1363, 220 USPQ 763, 773 (Fed. Cir.), cert. denied, 469 U.S. 821, 224 USPQ 520 (1984).

We uphold the Commission's findings and conclusion that Du Pont's affidavit or arguments before the examiner did not constitute material misrepresentation. As Akzo concedes, the examiner had both the Morgan

'645 patent and the Kwolek '542 patents before him throughout the examination process. It was on the basis of these two patents that Du Pont's first three applications were rejected. The mere fact that Du Pont attempted to distinguish the Blades process from the prior art does not constitute a material omission or misrepresentation. The examiner was free to reach his own conclusion regarding the Blades process based on the art in front of him. Nor does Du Pont's affidavit, advocating a particular interpretation of the Morgan '645 and Kwolek '542 patents (albeit favorable to Du Pont's position), show any intent to mislead the PTO. Du Pont's intent was not to mislead, but rather to distinguish prior art from the Blades process and demonstrate to the examiner that the Blades process and demonstrate to the examiner that the Blades process was not obvious in light of Morgan '645 and Kwolek '542. The sum of it is that, because we cannot see either a proved material misrepresentation or a proved intent to mislead, we must conclude that Akzo has not met its burden of proving inequitable conduct before the PTO.

III. Due Process and Treaty Rights

A. *Due Process*. This aspect of the appeal concerns the Commission's procedures with respect to the private parties' confidential information. On May 21, 1984, the ALJ issued an administrative protective order pertaining to confidential business information, as defined in the Commission's Rules, 19 C.F.R. §210.30(d)(7) (1976), that would be produced during the discovery phase of the investigation.

In general, this order permitted access to all such confidential information by Akzo's and Du Pont's outside counsel but not by management personnel or in-house counsel of either private company. At a preliminary conference held June 22, 1984, Akzo made the first of three unsuccessful attempts to modify the protective order. Arguing that there was a substantial overlap between the Commission's investigation and an action brought by Akzo against Du Pont them (and still) pending in the United States District Court for the District of Delaware, Akzo moved to align the protective orders by modifying the ALJ's protective order so that its terms coincided with those of a protective order earlier issued by the District Court in the Delaware action. The ALJ denied Akzo's motion on July 6, 1984.

By letter dated June 27, 1984, Akzo requested that the protective order be amended

¹⁴ This standard is identical to the PTO standard of materiality. 37 C.F.R. §1.56(a).

to include three designated members of Akzo's in-house counsel. On July 6, 1984, the ALJ concluded that Akzo failed to demonstrate the requisite need to warrant granting Akzo's in-house counsel access to Du Pont's confidential business information. Akzo renewed its motion to modify the protective order on February 8, 1985, this time urging that both Akzo's in-house counsel and the general manager of Akzo's Industrial Fiber Group should be granted limited access to Du Pont's confidential business information. Because Akzo failed (in the ALJ's view) to demonstrate a need for either its in-house counsel or its general manager to have access to the requested confidential material, the ALJ denied Akzo's motion on February 21, 1985.

Akzo now contends that the protective order, issued by the ALJ on May 21, 1984, effectively deprived it of its rights to confrontation, to rebuttal, and to effective assistance of counsel. According to Akzo, under the terms of the protective order, the parties' designation of materials as confidential had the effect of "unilaterally immunizing them from scrutiny by the opposing party." Moreover, Akzo maintains that the system established by the protective order completely denied Akzo "access to all of the critical evidence on which the decision against it was based."

[2] Our examination of the challenged protective order, as it was enforced, shows Akzo's charges to be groundless. The protective order provides, *inter alia*, that confidential business information "shall be disclosed at any hearing only *in camera* before the commission or the administrative law judge." Although the protective order enabled either party to designate business information as confidential, such a designation did not "unilaterally immunize" purportedly confidential documents from scrutiny by the opposing party. In the first place, all the protected information was freely available to outside counsel who could fully consider it, although they were not free to show or repeat it to Akzo's management or in-house counsel. Second, paragraph 10 of the protective order provided a mechanism by which either party was free to object to its adversary's designations at any stage of the proceeding. According to paragraph 10, if either party disagreed with respect to the designation of business material as confidential, that party "shall confer [with the supplier] as to the status of the subject information proffered within the context of this order." In the event that the parties failed within 10 days to reach agreement as to the proper status of the information, the protective order pro-

vided that either party could submit the issue to the ALJ or the Commission for resolution. The mechanism of paragraph 10 could also be used to permit disclosure to particular persons of otherwise classified material. Although, as mentioned earlier, Akzo attempted to modify the protective order on three separate occasions, Akzo never invoked the dispute resolution procedures of paragraph 10 to challenge Du Pont's characterization of business information as confidential or as not disclosable to particular individuals. Third, the protective order expressly permitted other exceptions to be made by the ALJ or the Commission.

In denying Akzo's various motions to amend the protective order, the ALJ relied on the Commission's decision in *Certain Rotary Wheel Printers*, Inv. No. 337-TA-145, 5 ITRD 1933 (Nov. 4, 1983). According to *Rotary Wheel Printers*:

[p]rotection of confidential information is crucial to the Commission's ability to carry out its statutory responsibilities. In addition, review after discovery and the evidentiary hearing are completed would provide an inadequate remedy. The inappropriate release of confidential information can never be fully remedied.

The Commission has traditionally been reluctant to release confidential information where not absolutely necessary.

5 ITRD at 1935.

Thus, implicit in Akzo's due process attack on the protective order is the position that, in the interests of fundamental fairness, it was "absolutely necessary" for Akzo's in-house counsel and general manager to have access to Du Pont's confidential business information. However, "[i]n section 337 investigations, it is the exception rather than the rule to release confidential information to in-house counsel." *Id.*

The primary justification for the Commission's reluctance to grant adversary management and in-house counsel access to confidential business information is that, in order to discharge its statutory responsibilities within the strict statutory time limits, the Commission is heavily dependent on the voluntary submission of information. Disclosure of sensitive materials to an adversary would undoubtedly have a chilling effect on the parties' willingness to provide the confidential information essential to the Commission's fact-finding processes. The Commission has resolved the difficult and controversial question of the role of in-house counsel by taking a conservative position on the side of optimum shielding of business

information. Obviously, where c material is disclosed to an emp competitor, the risk of the comp taining an unfair business advan substantially increased. This ge mission position is neither unreal arbitrary. It represents an appro ancing between the needs demar Commission's process and the p for participation by its in-house

This is especially true because *per se* rule against disclosure competitor's in-house counsel ment representative. *Rotary Wh* established, and the ALJ employ part balancing test to determine whom, and under what condition confidential information. Factor sidered include the party's need i dental information sought in o quately prepare its case, the disclosure would cause the party the information, and the forum maintaining the confidentially material sought. 5 ITRD at 1937

After reviewing the record, t cluded that Akzo failed to clearly a need for granting acc dental business information to in-house counsel or key mana cials. The ALJ also found th would cause substantial harm competitive position. These p ings cannot be faulted. The stands that all information rela validity and enforceability (*see pra*) was promptly made fully all. As for the information be important question of whether tation of aramid fibers would or substantially injure Du Po (see Part IV, *infra*), it is obvi confidential information — re Pont's business, activities, plan tions — should not be made less, perhaps, where absolutely a fair hearing) to a direct c Akzo. That such full access wa ly necessary to appellants' m own case is shown by the cr Akzo was at all times perfect its own market projections reveal its own activities, forec pretations. Both sides could Commission their own inform matters without knowing the side's.

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information. Obviously, where confidential material is disclosed to an employee of a competitor, the risk of the competitor's obtaining an unfair business advantage may be substantially increased. This general Commission position is neither unreasonable nor arbitrary. It represents an appropriate bal- ancing between the needs demanded by the Commission's process and the parties' need for participation by its in-house personnel.

This is especially true because there is no *per se* rule against disclosure to either a competitor's in-house counsel or management representative. *Rotary Wheel Printers* established, and the ALJ employed, a three- part balancing test to determine whether, to whom, and under what conditions to release confidential information. Factors to be considered include the party's need for the confidential information sought in order to adequately prepare its case, the harm that disclosure would cause the party submitting the information, and the forum's interest in maintaining the confidentiality of the information sought. 5 ITRD at 1937.

After reviewing the record, the ALJ con- cluded that Akzo failed to demonstrate clearly a need for granting access to confidential business information to either Akzo's in-house counsel or key management officials. The ALJ also found that disclosure would cause substantial harm to Du Pont's competitive position. These particular rulings cannot be faulted. The court under- stands that all information relating to patent validity and enforceability (*see Part II, supra*) was promptly made fully available to all. As for the information bearing on the important question of whether Akzo's import- ation of aramid fibers would tend to destroy or substantially injure Du Pont's business (*see Part IV, infra*), it is obvious that that confidential information — relating to Du Pont's business, activities, plans and expectations — should not be made available (unless, perhaps, where absolutely necessary for a fair hearing) to a direct competitor like Akzo. That such full access was not absolutely necessary to appellants' making of their own case is shown by the crucial fact that Akzo was at all times perfectly free to offer its own market projections as well as to reveal its own activities, forecasts, and interpretations. Both sides could present to the Commission their own information on those matters without knowing those of the other side's.

Akzo argues, however, that the denial of its motions to modify the protective order effectively denied its due process right to participate in its own defense. The conten-

tion is that Akzo was subjected to serious adverse governmental action on the basis of evidence which Akzo was never permitted to know and "personally" refute. In support of this position, Akzo invokes §555(b) of the Administrative Procedure Act which was made applicable to §337 proceedings by the 1974 Amendments to the Tariff Act of 1930. Under §555(b), "[a] party is entitled to appear in person or by or with counsel or other duly qualified representative in an agency proceeding." 5 U.S.C. §555(b). However, Akzo was represented by competent and experienced outside counsel throughout the proceedings; these counsel were aware of all confidential information. Further, Akzo fails to recognize that "the affirmative grant of the right to appear apparently bestowed by Section 555(b) is not blindly absolute, without regard to the status or nature of the proceedings and concern for the orderly conduct of public business." *De- Vyver v. Warden, U.S. Penitentiary*, 388 F.Supp. 1213, 1222 (M.D. Pa. 1974) citing *Easton Utilities Commission v. Atomic Energy Commission*, 424 F.2d 847, 852 (D.C. Cir. 1970). Whatever else §555(b) guarantees to parties to an administrative proceeding under §337, it does not mandate disclosure of significant confidential information to in-house counsel and corporate executives of a business competitor — where that information is fully available to outside counsel. Akzo's contention withers in the face of unrefuted evidence that more than 90 people representing Akzo, including numerous expert witnesses and members of the battery of four law firms comprising Akzo's defense team, had unrestricted access to Du Pont's confidential information.

Akzo has also failed to demonstrate that it suffered actual harm under the confidential- ity procedures instituted by the ALJ. Although Akzo's insiders were denied access to Du Pont's economic and market forecasts with respect to the production and sale of aramid fibers, Akzo was not prevented (as we have pointed out) from offering its own projections into evidence under the cover of confidentiality. It is difficult to see how Akzo was prejudiced.

Finally, we have neither found nor been directed to any judicial decision in this coun- try mandating, in the circumstances presen- here, that business confidential information must be made to inside management. On the contrary, we are aware, from the practice of our own court, that records in appeals to us are frequently classified in large part, and are presumably not available to the manage- ment of the opposing party. Moreover, there are a substantial number of decisions uphold-

ing confidentiality comparable to that accepted by the Commission. Akzo tells us that most of these involved only pretrial discovery (and not evidence at a hearing or trial) and that the others are also distinguishable. We do not stop to examine these arguments because, at the least, these decisions (a) show that there is no holding to the contrary of the one we now make and (b) strongly suggest the validity of carefully tailored protective orders allowing exceptions to be made if adequate proof is made.¹³

B. *Treaty rights*. As an alternate ground for reversal, Akzo argues that, because the proceedings below discriminated against Akzo on the basis of its Dutch nationality, they violate United States treaty obligations. We disagree with Akzo's premise that there was discrimination here. Essentially, Akzo employs a *non sequitur* to support its position. The core of Akzo's claim is that it was denied the rights that would have been afforded a domestic firm sued for patent infringement in a district court. According to Akzo, this "inferior treatment" by the Commission constitutes discrimination on the basis of nationality. That analysis misses the mark. The appropriate inquiry is whether Akzo was afforded the same rights afforded to domestic firms in a §337 proceeding before the *Commission*. Clearly, Akzo has failed to demonstrate that it suffered from discriminatory treatment. First, under the express terms of the protective order, both Akzo and Du Pont were bound by identical procedures regarding confidentiality and discovery. Neither party was allowed access to the other party's confidential business information. Second, the same argument was rejected in *Certain Spring Assemblies and Components Thereof*. Inv. No. 337-TA-88, 216 USPQ 225, *aff'd sub nom. General Motors Corp. v. U.S. International Trade Commission*, 687 F.2d 476, 215 USPQ 484 (CCPA 1982), *cert. denied*, 459 U.S. 1105 (1983). In that case, respondent unsuccessfully raised certain U.S.-Canadian treaties as a defense to enforcement of §337. The Commission observed:

Section 337 does not discriminate against foreign corporations by virtue of their for-

sign status. It applies to foreign and domestic corporations alike. Section 337 gives the Commission jurisdiction over products imported from a foreign country, *even if they are manufactured and/or imported by a U.S. corporation*. The Commission's jurisdiction lies in unfair acts occurring in connection with the importation of goods into the United States or their sale, and it extends to all persons engaged in such unfair acts.

²¹⁶ USPQ at 231 (emphasis added).

IV. Other Issues

In this part we consider four separate issues raised by appellants: (1) whether the Commission properly found that continued importation of Akzo's product would substantially injure or tend to injure Du Pont; (2) whether adjudication of §337 actions by a non-Article III tribunal is unlawful; (3) whether Du Pont's pricing practices (with respect to its aramid products) violate the antitrust laws; and (4) whether Du Pont committed inequitable conduct by infringing Akzo's own patent.

A. *Tendency to destroy or substantially injure.* The ALJ concluded (and we have upheld) that Akzo violated §337(a) by the unlawful importation or sale of certain aramid fibers produced in the Netherlands by means of a process which if practiced in the United States would infringe the Blades '756 patent. Such acts, long considered to be violative of §337, clearly constitute unfair acts for the purposes of the statute. See, e.g., *In re Chain Door Locks*, USITC Pub. No. 770 (Apr. 1976), 191 USPQ 272 (USITC 1976); *In re Von Clemm*, 229 F.2d 441, 108 USPQ 371 (CCPA 1955); *In re Amtorg Trading Corp.*, 75 F.2d 826, 24 USPQ 315 (CCPA), cert. denied, 296 U.S. 576 (1935).

However, unfair acts, without more, are legally insufficient to support a finding of a §337 violation. That provision declares unlawful "[u]nfair methods of competition and unfair acts in the importation of articles . . . , the effect or tendency of which is to destroy or substantially injure an industry, efficiently and economically operated, in the United States." Thus, to prove a violation of §337, the complainant must show both an unfair act and a resulting detrimental effect or tendency. *New England Butt Co. v. U.S. International Trade Commission*, 756 F.2d 874, 876, 225 USPQ 260, 261 (Fed. Cir. 1985). As this court recently held in *Textron, Inc. v. U.S. International Trade Commission*, 753 F.2d 1019, 224 USPQ 625 (Fed. Cir. 1985), "section 337 has consis-

¹⁴ This case differs from *Viscosan S.A. v. U.S. International Trade Commission*, 787 F.2d 544, 552, 229 USPQ 118, 124 (Fed. Cir. 1986), because here (but not in *Viscosan*) the confidentiality problem was directly related to the propriety of the exclusion order. Accordingly, we have reviewed the merits of the confidentiality actions. See *American Telephone and Telegraph Co. v. U.S. International Trade Commission*, 626 F.2d 841, 842, 206 USPQ 111, 112 (CCPA 1980).

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Akzo N.V. v. Ii

tently been interpreted to contain a ¹ injury requirement of independent 753 F.2d at 1028, 224 USPQ at 63 (tions omitted); accord, *Corning Glass v. U.S. International Trade Comm.* 799 F.2d 1559, 230 USPQ 822 (F. 1986); *Warner Brothers, Inc. v. U.S. national Trade Commission*, 787 F. 564, 229 USPQ 126, 127 (Fed. Cir. 1986). "Corporation" is a term of art.

According to *Textron*, "Congress well have included this separate requirement . . . to insure that the extreme and nationally provocative remedy contained [by §337] — exclusion of imports from particular countries — would be implemented only when this is compelled by economic reasons." 753 F.2d at 1028, 1986 USPQ at 631 (citations omitted). That the mere concurrence of an injury and some resulting injury is not sufficient, in itself, to establish a violation of §337. "Congress has directed that the remedy of section 337, involving as it does of the sovereign in closing our borders to certain imports, be exercised only in instances where at least there is a tendency to substantially injure an industry." *Corning Glass Works International Trade Commission*, 1559, 1567, 230 USPQ 822, 827 (1986) (emphasis in original).

Not only is an injury determinedly wed to the particular fact case, but also the determination precisely the type of question Congress has committed to the expert Commission. Thus, on appeal, of an injury determination is limiting whether the Commission's supported by substantial evidence §1373(c) (1982); *S. SSIH Equipment S.A. v. U.S. I Trade Commission*, 718 F.2d 3 USPQ 678, 684 (Fed. Cir. 1983); *Motors Corp. v. U.S. International Trade Commission*, 687 F.2d 476, 21 (CCPA 1982), *cert. denied*, 456 U.S. 113 (1983). In other words, we "whether substantial evidence facts relied on and whether the Commission's [sic] determination, on an arbitrary, capricious, or an action." *Corning Glass Works*, 1568, 230 USPQ at 828. At *Corning Glass Works*, "the quantum of injury is not one on which appropriate for this court to pass standard." *Id.* Nor are we all to our own judgment for the Commission. *Citizens to Preserve Overton Park v. Volpe*, 401 U.S. 402, 406, course, a decision is supported

status. It applies to foreign and domestic corporations alike. Section 337 is the Commission jurisdiction over imports from a foreign country, if they are manufactured and/or imported by a U.S. corporation. The Commission's jurisdiction lies in unfair acts arising in connection with the importation of goods into the United States or for sale, and it extends to all persons engaged in such unfair acts. SPQ at 231 (emphasis added).

IV. Other Issues

In this part we consider four separate issues raised by appellants: (1) whether the Commission properly found that continuation of Akzo's product would substantially injure or tend to injure Du Pont; (2) whether adjudication of §337 actions by Article III tribunal is unlawful; (3) whether Du Pont's pricing practices (with respect to its aramid products) violate the antitrust laws; and (4) whether Du Pont engaged in inequitable conduct by infringing its own patent.

Tendency to destroy or substantially injure The ALJ concluded (and we have) that Akzo violated §337(a) by the importation or sale of certain aramid fibers produced in the Netherlands by of a process which if practiced in the United States would infringe the Blades '756

Such acts, long considered to be of §337, clearly constitute unfair acts for the purposes of the statute. See, e.g., *Chain Door Locks*, USITC Pub. No. 1976), 191 USPQ 272 (USITC *In re Von Clemm*, 229 F.2d 441, 108 371 (CCPA 1955); *In re Amtorg Corp.*, 75 F.2d 826, 24 USPQ 315 (1935), cert. denied, 296 U.S. 576 (1935).

ever, unfair acts, without more, are insufficient to support a finding of a violation. That provision declares unfair methods of competition and acts in the importation of articles . . ., the tendency of which is to destroy substantially injure an industry, efficiently operated, in the United States. Thus, to prove a violation of §337, a plaintiff must show both an unfair and a resulting detrimental effect or injury. *New England Butt Co. v. U.S. International Trade Commission*, 756 F.2d 116, 225 USPQ 260, 261 (Fed. Cir. 1985). As this court recently held in *Textron, Inc. v. U.S. International Trade Commission*, 753 F.2d 1019, 224 USPQ 625 (Fed. Cir. 1985), "section 337 has consistently

tended to be interpreted to contain a distinct injury requirement of independent proof." 753 F.2d at 1028, 224 USPQ at 631 (citations omitted); accord, *Corning Glass Works v. U.S. International Trade Commission*, 799 F.2d 1559, 230 USPQ 822 (Fed. Cir. 1986); *Warner Brothers, Inc. v. U.S. International Trade Commission*, 787 F.2d 562, 564, 229 USPQ 126, 127 (Fed. Cir. 1986).

According to *Textron*, "Congress may well have included this separate requirement . . . to insure that the extreme and internationally provocative remedy contemplated [by §337] — exclusion of imports from particular countries — would be implemented only when this is compelled by strong economic reasons." 753 F.2d at 1028-29, 224 USPQ at 631 (citations omitted). It follows that the mere concurrence of an unfair act and some resulting injury is not necessarily sufficient, in itself, to establish a violation of §337. "Congress has directed that the remedy of section 337, involving as it does the act of the sovereign in closing our borders to certain imports, be exercised only in those instances where at least there is proof of a tendency to substantially injure the subject industry." *Corning Glass Works v. U.S. International Trade Commission*, 799 F.2d 1559, 1567, 230 USPQ 822, 827 (Fed. Cir. 1986) (emphasis in original).

Not only is an injury determination intimately wed to the particular facts of each case, but also the determination of injury is precisely the type of question which Congress has committed to the expertise of the Commission. Thus, on appeal, our review of an injury determination is limited to deciding whether the Commission's decision is supported by substantial evidence. 19 U.S.C. §1337(c) (1982); 5 U.S.C. §706 (1982); *SSIH Equipment S.A. v. U.S. International Trade Commission*, 718 F.2d 365, 371, 218 USPQ 678, 684 (Fed. Cir. 1983); *General Motors Corp. v. U.S. International Trade Commission*, 687 F.2d 476, 215 USPQ 484 (CCPA 1982), cert. denied, 459 U.S. 1105 (1983). In other words, we must decide "whether substantial evidence supports the facts relied on and whether the Commissioner's [sic] determination, on the record, is arbitrary, capricious, or an abuse of discretion." *Corning Glass Works*, 799 F.2d at 1568, 230 USPQ at 828. As we noted in *Corning Glass Works*, "the question of quantum of injury is not one on which it would be appropriate for this court to put forth a legal standard." *Id.* Nor are we allowed to substitute our own judgment for that of the Commission. *Citizens to Preserve Overton Park v. Volpe*, 401 U.S. 402, 416 (1971). Of course, a decision is supported by substantial

evidence if it is supported by "such relevant evidence as a reasonable mind might accept as adequate to support a conclusion." *Consolidated Edison Co. v. NLRB*, 305 U.S. 197, 229 (1938).

Our review of the record in this case compels the conclusion that the Commission's determination — that Akzo's unfair imports of aramid fibers will have a tendency to injure Du Pont substantially — is supported by substantial evidence. The Commission based its injury determination on a prediction of the future effect of Akzo's unfair imports on the domestic industry. There is substantial support for this determination. The record reflects Akzo's intent and capacity to enter the United States aramid fibers market, Du Pont's resulting loss of revenue, and a probable price reduction by Du Pont in response to Akzo's entry into the United States market. Nonetheless, Akzo urges this court to overturn the Commission's exclusion order and deny relief to Du Pont. Akzo first contends that its projected share of the U.S. market during the remaining life of the '756 patent is *de minimis*. It would be both unwise and improper for this court to establish some arbitrary market-share benchmark as a prerequisite to a finding of a §337 violation and we decline to do so. It is sufficient that the record supports the Commission's conclusion that, upon entry into the U.S. market, Akzo will capture a significant share of the domestic market, if not in relative percentage figures than certainly in absolute dollar figures.

[3] Second, Akzo maintains that, notwithstanding its entry into the market, Du Pont's aramid fibers sales volume, revenues and profits will all increase during the remaining life of the patent. But Akzo mischaracterizes the proper standard for measuring injury. The issue is not whether Du Pont's sales, revenues and profits will increase beyond their 1985 levels but rather whether Akzo's presence in the market will substantially injure Du Pont's business during the 1986-1990 period (the remaining life of the Blades '756 patent).

As Du Pont correctly points out, nothing in §337 requires a showing that the domestic industry will be utterly deprived of profitability. "Where the unfair practice is the importation of products that infringe a domestic industry's . . . patent right, even a relatively small loss of sales may establish, under section 337(a), the requisite injury . . ." *Bally/Midway Mfg. Co. v. U.S. International Trade Commission*, 714 F.2d 1117, 1124, 219 USPQ 97, 102 (Fed. Cir. 1983). This proposition is entirely consistent with the legislative history of §337. In a House

Report discussing the application of §337 to unfair competition involving patent infringement, Congress stated: "Where unfair methods and acts have resulted in *conceivable losses of sales*, a tendency to substantially injure such industry has been established." See House Comm. on Ways and Means, Trade Reform Act of 1973, H.R. Rep. No. 571, 93d Cong. 1st Sess. 78 (1973) (emphasis added); accord *In re Von Clemm*, 229 F.2d 441, 445, 108 USPQ 371, 374 (CCPA 1955).

Because substantial evidence supports the facts relied upon by the Commission in making its determination that Akzo's unfair imports would tend to injure Du Pont substantially, we must affirm its injury determination. Akzo has failed to demonstrate that the commission's determination is arbitrary, capricious, or an abuse of discretion.

A contrary result would emasculate the protections of §337 with respect to high technology ventures. Typically, in high technology industries, acute competition forces competitors to commit substantial resources to research and development in hopes of generating profits before either their patents expire or before technological advance makes the products obsolete. Thus, innovators frequently resign themselves to losses during the early life of their patents with the expectation that, if product development and marketing efforts are successful, profits earned during the later life of other patents will provide sufficient compensation for their endeavors.

On this record, Du Pont's aramid fibers industry can be said to furnish a classic illustration. Although Du Pont has undertaken extensive product development and marketing efforts since 1973, the company had not earned any return on its investment through 1984. Du Pont anticipates that it will realize its first positive net operating earnings from its aramid fibers production in 1985.

In reaching its injury determination, the Commission permissibly recognized that the aramid fibers industry is in transition from a period requiring extremely high investment of resources to a period when the industry will finally realize a return on that investment. In these circumstances, diminished profits, lower return on investment, and reduced sales are all indicative of substantial injury.

[4] *B. Adjudication of §337 actions by a non-Article III tribunal.* Apparently employing the "kitchen sink" or "let's try anything" approach to appellate advocacy, Akzo

raises an additional challenge to the Commission's proceedings. Relying primarily on *Northern Pipeline Construction Co. v. Marathon Pipe Line Co.*, 458 U.S. 50 (1982), Akzo characterizes the current §337 proceedings as "inherently judicial" involving "essentially private rights" and concludes that the Constitution requires adjudication of §337 issues by Article III courts. Both Akzo's premise and conclusion are flawed. Although it is true that private rights may be affected by §337 determinations, the thrust of the statute is directed toward the protection of the public interest from unfair trade practices in international commerce. As this court recognized in *Young Engineers, Inc. v. U.S. International Trade Commission*, 721 F.2d 1305, 1315, 219 USPQ 1142, 1152 (Fed. Cir. 1983), a §337 proceeding "is not purely private litigation 'between the parties' but rather is an 'investigation' by the Government into unfair methods of competition or unfair acts in the importation of articles into the United States." Moreover, "[t]he power to regulate commerce with foreign nations is expressly conferred upon Congress, and being an enumerated power is complete in itself, acknowledging no limitations other than those prescribed in the Constitution." *Butfield v. Stranahan*, 192 U.S. 470, 492 (1904). Properly viewed, §337 and its predecessor provisions represent a valid delegation of this broad Congressional power for the public purpose of providing an adequate remedy for domestic industries against unfair practices beginning abroad and culminating in importation. *Sealed Air Corp. v. U.S. International Trade Commission*, 645 F.2d 976, 985-86, 209 USPQ 469, 478 (CCPA 1981).

C. Du Pont's pricing practices. Under Du Pont's value-in-use pricing program, the price at which Du Pont sells aramid fibers varies in accordance with the particular end-use to which the purchaser puts the product. Although Du Pont's customers may use the aramid fibers for whatever purpose they desire, they are required to pay Du Pont the price appropriate to the ultimate end-use. To that objective, Du Pont requires its customers to agree that they will use the aramid fibers for the specific end-use for which they are purchased or, if the aramid fibers are put to a different end-use or are resold, that they will pay Du Pont an amount representing the difference between the initial purchase price and the price for the ultimate end-use.

According to Akzo, each such agreement constitutes a "contract . . . in restraint of trade," and the entire pattern of agreements, policing and surveillance constitutes a "combination . . . in restraint of trade" within the

meaning of §1 of the Sherman Act though the Commission specifically that "the adoption of Du Pont's value-in-use pricing strategy reflects price competition with other substitute products for end uses," Akzo continues to argue that Du Pont's value-in-use pricing for aramid violates the antitrust laws.

Plainly, value-in-use pricing is not an anticompetitive restraint on trade, but the meaning of the antitrust laws. In *Wallace, Inc. v. United States*, 1374, 171 USPQ 359 (Ct. Cl. 1977), this court's predecessor courts against an antitrust challenge a problem in which purchasers paid a lot for the drug meprobamate when certain combination drugs. The court held that "the vendee firms, if one looks at the business as a whole, are not pro-deterred from making any use of the meprobamate." *Id.* at 1379, 171 USPQ at 362. Moreover, "[i]t is even reasonable to assume, nothing else appearing, that the vendee change their minds after the drug at the lower price they unrestricted use of it by paying a price between that lower price and the antitrust decree price." *Id.* at 1379, 171 USPQ at 362 n.4.

Similarly, under Du Pont's value-in-use pricing system, its customers may use aramid fibers for whatever purpose they desire, including resale, providing Du Pont the price appropriate to the ultimate end-use. Contrary to Akzo's position, Du Pont's pricing system is anticompetitive, not procompetitive, as it establishes an unreasonable restriction on sale, the Commission found an anticompetitive effect.

Akzo also claims that the ALI report making specific findings on its pricing practices is groundless. But, as this court recently held, a trier of fact need not engage in a less exercise of market definition if the wrong conduct has been shown. *Sealed Air Corp. v. Ultraseal Ltd.*, 781 F.2d 228, 100 USPQ 2d 90, 100 (Fed. Cir. 1985). Akzo's contention is belied by not shifting to Du Pont the burden of demonstrating that its pricing has the procompetitive effect. The Supreme Court in *National Collegiate Athletic Association v. Board of Regents*, 468 U.S. 84, 100 USPQ 2d 90, 100 (1985), made abundantly clear that the burden of proof shifts only where the party challenging the practice has the burden of demonstrating that it has operated to reduce output." *Id.* at 113.

an additional challenge to the Commission's proceedings. Relying primarily on *International Pipeline Construction Co. v. Mar-Pipe Line Co.*, 458 U.S. 50 (1982), characterizes the current §337 proceedings as "inherently judicial" involving "initially private rights" and concludes the Constitution requires adjudication of 37 issues by Article III courts. Both premise and conclusion are flawed. Although it is true that private rights may be determined by §337 determinations, the thrust of the statute is directed toward the protection of the public interest from unfair trade practices in international commerce. As this is recognized in *Young Engineers, Inc. v. International Trade Commission*, 721 F.2d 1305, 1315, 219 USPQ 1142, 1152 (Fed. Cir. 1983), a §337 proceeding "is not 'private litigation' between the parties; there is an 'investigation' by the Government into unfair methods of competition or unfair acts in the importation of articles into the United States." Moreover, "[t]he power to regulate commerce with foreign nations is expressly conferred upon Congress and being an enumerated power is not in itself, acknowledging no limitation other than those prescribed in the Constitution." *Butfield v. Stranahan*, 192 U.S. 92 (1904). Properly viewed, §337 and predecessor provisions represent a valid limitation of this broad Congressional power for the public purpose of providing an adequate remedy for domestic industries against unfair practices beginning abroad and culminating in importation. *Sealed Air Corp. v. International Trade Commission*, 645 F.2d 976, 985-86, 209 USPQ 469, 478 (Fed. Cir. 1981).

Du Pont's pricing practices. Under Du Pont's value-in-use pricing program, the price at which Du Pont sells aramid fibers in accordance with the particular end-use for which the purchaser puts the product. Although Du Pont's customers may use the fibers for whatever purpose they desire, they are required to pay Du Pont the appropriate price to the ultimate end-use. To achieve this objective, Du Pont requires its customers to agree that they will use the aramid fibers for the specific end-use for which they purchased or, if the aramid fibers are put to a different end-use or are resold, that they will pay Du Pont an amount representing the difference between the initial purchase price and the price for the ultimate end-use. According to Akzo, each such agreement constitutes a "contract . . . in restraint of trade" and the entire pattern of agreements, including surveillance, constitutes a "combination . . . in restraint of trade" within the

meaning of §1 of the Sherman Act. Although the Commission specifically found that "the adoption of Du Pont's value-in-use pricing strategy reflects price competition with other substitute products for various end uses," Akzo continues to argue that Du Pont's value-in-use pricing for aramid fibers violates the antitrust laws.

Plainly, value-in-use pricing is not *per se* an anticompetitive restraint on trade within the meaning of the antitrust laws. In *Carter-Wallace, Inc. v. United States*, 449 F.2d 1374, 171 USPQ 359 (Ct. Cl. 1971), one of this court's predecessor courts sustained against an antitrust challenge a pricing system in which purchasers paid a lower price for the drug meprobamate when used in certain combination drugs. The court noted that "the vendee firms, if one looks at their business as a whole, are not prohibited or deterred from making any use they wish of the meprobamate." *Id.* at 1379, 171 USPQ at 362. Moreover, "[i]t is even reasonable to assume, nothing else appearing, that if the vendees change their minds after purchasing the drug at the lower price they can make unrestricted use of it by paying the difference between that lower price and the consent-decree price." *Id.* at 1379 n.4, 171 USPQ at 362 n.4.

Similarly, under Du Pont's value-in-use pricing system, its customers may use their aramid fibers for whatever purpose they desire, including resale, providing they pay Du Pont the price appropriate to the ultimate end-use. Contrary to Akzo's position that Du Pont's pricing system is anticompetitive and an unreasonable restriction on use and resale, the Commission found and the record establishes that Du Pont's value-in-use pricing has the procompetitive effect of increasing the volume of aramid fibers that are sold.

Akzo also claims that the ALJ erred in not making specific findings on market definition. But, as this court recently observed, the trier of fact need not engage in the meaningless exercise of market definition where no wrongful conduct has been shown. *Loctite Corp. v. Ultraseal Ltd.*, 781 F.2d 861, 875, 228 USPQ 90, 100 (Fed. Cir. 1985). Equally groundless is Akzo's contention that the ALJ erred by not shifting to Du Pont the burden of demonstrating that its pricing policies had procompetitive effects. The Supreme Court, in *National Collegiate Athletic Ass'n v. Board of Regents*, 468 U.S. 895 (1984), made abundantly clear that the burden of proof shifts only where the evidence shows that the challenged practice has the "hallmarks of anticompetitive behavior," namely, that "it has operated to raise prices and reduce output." *Id.* at 113. Conversely, in

this case, the evidence establishes and the Commission found that the alleged "restraint," value-in-use pricing, results in reduced prices and increased output.

D. Du Pont's alleged inequitable conduct in manufacture. During the proceedings below, Akzo asserted that Du Pont infringed Akzo's U.S. patent 4,308,374 ('374 patent) on a polymerization solvent system used in the formulation of the polymer which is spun into aramid fibers by means of the Blades '756 process. Notwithstanding §337(c) of the Tariff Act of 1930 which provides that "[a]ll legal and equitable defenses may be presented," the ALJ struck Akzo's equitable defense and refused to hear the underlying evidence. On appeal, Akzo contends that the ALJ thus denied Akzo the opportunity to establish a meritorious defense to Du Pont's §337 claim. For two reasons we disagree that this defense was meritorious.

Our conclusion is first supported by the recent decision of the District Court for the Eastern District of Virginia holding the '374 patent invalid for obviousness under 35 U.S.C. §103. *Akzo N.V. v. E.I. DuPont de Nemours & Co.*, Civil Action No. 85-0459-R (E.D. Va. April 24, 1986), on appeal to this court, No. 86-1327/1358.¹⁶ Under that decision, Akzo's infringement claim has been adversely decided and Du Pont has a legal right to do the act claimed to be infringing. Consequently, there is as yet no legitimate basis for Akzo's equitable defense. See *Young Engineers, Inc. v. U.S. International Trade Commission*, 721 F.2d 1305, 1315-16, 219 USPQ 1142, 1152 (Fed. Cir. 1983). Second, this same result is compelled in this instance by this court's decision in *SSIH Equipment S.A. v. U.S. International Trade Commission*, 718 F.2d 365, 218 USPQ 678 (Fed. Cir. 1983). In *SSIH*, we held that allegedly "inequitable conduct" is not a defense to a §337 action where the conduct occurred after issuance of the complainant's patent and involved a different patent. *Id.* at 378-79, 218 USPQ at 689-90. In this case, Du Pont's '756 patent was issued in 1973 and pertains to a spinning process; Akzo's '374 patent was issued in 1981 and pertains to a polymerization process.

Conclusion

For these reasons, we affirm the Commission's exclusion order prohibiting the importation of aramid fibers.

¹⁶ That appeal was argued on November 7, 1986 before the same panel of judges as heard the current appeal.

tation into the United States of aramid fibers manufactured by Akzo in the Netherlands.

AFFIRMED.

Court of Appeals, Ninth Circuit

Lifshitz v. Walter Drake & Sons Inc., et al.
Nos. 85-6087 and 85-6130
Decided December 30, 1986

JUDICIAL PRACTICE AND PROCEDURE

1. Procedure — Motions (§410.31)

F.R.Civ.P. 50(b)'s requirement that motion for judgment notwithstanding verdict be brought only if party has moved for directed verdict at close of evidence is not satisfied by defendant's motion in limine which, in seeking dismissal of plaintiff's unfair competition claims, was brought prior to trial but not ruled upon until after close of evidence, which was limited to claim that court lacked jurisdiction to entertain common law unfair competition claims based on alleged copying, and which did not address additional unfair competition issues, since issue of sufficiency of evidence on unfair competition claims was not placed squarely before district court, and thus such motion was not enough like motion for directed verdict so as to satisfy requirements of rule.

COPYRIGHTS

2. Notice, deposit and registration — Notice — Omission of or error in notice (§207.0305)

Copyright Act's exception, 17 USC 405(a)(1), for distribution of "relatively small" number of copies of work from which copyright notice has been omitted, does not apply in case where party began adding copyright notice with date more than one year after year in which first publication occurred, since all copies of such work, numbering approximately 15,000, are deemed by 17 USC 406(b) to have been published without notice.

3. Notice, deposit and registration — Notice — Omission of or error in notice (§207.0305)

Copies of product not bearing copyright notice that were in hands of distributor had

not yet been "distributed to the public" as called for by 17 USC 405(a)(2), and thus party asserting copyright should have made efforts to remedy notice on such copies.

4. Notice, deposit and registration — Notice — Omission of or error in notice (§207.0305)

"Substantial compliance rule," which has been applied under 1909 Copyright Act to bar willful infringers from asserting errors in copyright notice as defense, should not be applied to significantly different statutory scheme of 1976 Copyright Act.

Appeal from District Court for the Central District of California, Keller, J.

Actions by Igor Lifshitz against Walter Drake & Sons Inc., and Etna Products Co. Inc. for trademark infringement, unfair competition, fraud, conspiracy, copyright infringement, and intentional infliction of emotional distress. From judgment in part for plaintiff, defendant Etna and plaintiff appeal. Affirmed.

Kathryn Tschopik, Los Angeles, Calif., and Robert C. Faber, New York, N.Y., for appellant.

Clinton T. Bailey, Beverly Hills, Calif., for appellee Lifshitz.

Before Wallace, Boochever, and Kozinski, Circuit Judges.

Wallace, Circuit Judge.

Etna Products Co., Inc. (Etna) appeals from the district court's denial of its motion for a judgment notwithstanding the verdict (j.n.o.v.) or for a new trial on Lifshitz's unfair competition claim. Etna also contends that the district court erred in denying its motion for a new trial because of improper instruction to the jury regarding Lifshitz's unfair competition claims, and in improperly excluding certain evidence. Lifshitz cross-appeals from the entry by the district court of a j.n.o.v. on Lifshitz's copyright claim. The district court had jurisdiction under 28 U.S.C. §§ 1332 and 1338(b). We have jurisdiction pursuant to 28 U.S.C. § 1291, and we affirm.

I

Lifshitz, a native of the Soviet Union who emigrated to the United States in 1975,

developed a mechanical device for m hors d'oeuvres that he began marketi the general public in 1979. By 1981, Li had also sold his hors d'oeuvres maker mail order houses and was seeking to n it to several others, including Walter & Sons, Inc. (Drake). In response 1 shitz's efforts, Drake requested add information and a sample of the Drake subsequently informed Lifshitz intended to include his product in i catalogue. Ultimately, however, Dra chased an apparently identical produ Etna and began to market it instead latter part of 1982, Lifshitz learned t replica was being advertised in Drak Christmas catalogue and instituted action against Etna and Drake, as several other mail other companies. tion was subsequently dismissed ag parties except Etna and Drake.

Lifshitz pleaded a wide variety but pretrial motions and dismissals issues substantially. The case was s to the jury on claims for trademark, unfair competition, fraud, cc copyright infringement, and inten fliction of emotional distress. The j in favor of Drake on all claims, ar Etna on only the unfair compet copyright infringement claims. I moved for a j.n.o.v. and for a new district court granted Etna's mo j.n.o.v. with respect to Lifshitz's claim, but denied it with respect to unfair competition claim, and de motion for a new trial.

Etna appealed the denial of motion with regard to the unfair claim and of its motion for a Lifshitz cross-appealed the j.n.o.v. Etna on the copyright infringem

II

We treat first Etna's appeal of district court's denial of its motions on Lifshitz's unfair competition for a new trial.

In order to bring a motion party must have moved for a di at the close of all the evidence P. 50(b). The motion Etna file d verdict after the close of e trial below requested a directe on Lifshitz's copyright an claims. It did not address Li competition claims. Etna do this but rather asserts that t of rule 50(b) is satisfied by i tion in *limine* for dismissal o

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